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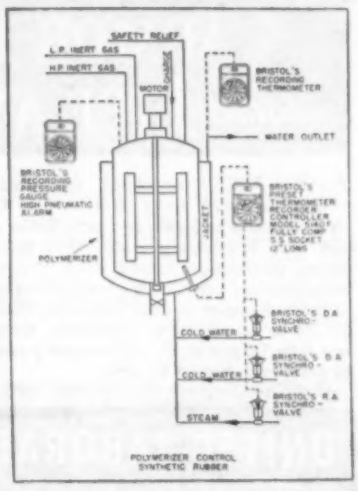
NEW EQUIPMENT DIGEST

EQUIPMENT • IMPROVEMENTS • PROCESSES • MATERIALS • METHODS • APPLICATIONS • LITERATURE

Vol. 8 | July, 1943 | No. 7

TEMPERATURE CONTROLLER



Incorporating in single instrument all equipment necessary to automatically control temperature in polymerization of butadiene and copolymers such as styrene and acrylonitrile, this automatic temperature controller guides complete cycle. Polymerization process is controlled completely, including heating and cooling cycles. It is designed to eliminate overshooting of control point as temperature reaches control setting, as well as to control temperature at desired value during reaction cycle. Instrument is of air-operated recording type. Made by **The Bristol Co.**, Waterbury, Conn.

▲ Mention Item NED-3347 when writing ▲

DUMPING SKID BOX

Capable of being dumped satisfactorily with standard fork or high-lift power trucks, this drop bottom dump skid box facilitates handling of bulk materials. All-steel box is attached to skid platform with continuous hinge at one end. Steel plates welded to skid hold it in position and prevent it from sliding back as forks are lowered. Latch rings at top rear of box hook over plate welded to truck mast.

In operation, skid portion is entered with forks or platform of truck, box is elevated and latch rings attached. As forks are lowered, skid portion goes down while box portion raises upward, so that box contents are dumped in front of unit.

Spot dumping of materials is accomplished by side plates which form chute to keep contents from spilling out sides during dumping operation. Side plates may be extended to box top and crane loop welded to each plate. This permits unit to be handled by crane for transporting or tiering. Unit may also be used as standard skid box for unit load transportation or handled by hand lift trucks for short operational spotting. Made by **The Union Metal Mfg. Co.**, Dept. NE, Canton, O.

▲ Mention Item NED-3348 when writing ▲

WATERPROOF TAPE

Resistant to humidity, rain and actual immersion in water for weeks at a time, Solseal tape is applied in same manner as regular sealing tape, using same type of moistening dispenser. Special solvent is used as moistening agent. Solvent causes tape to become waterproof after 72-hour period.

Bondings effected with tape remain waterproof despite prolonged and repeated immersion and drying. Tape may be used with any kind of waterproof box or carton. It is available in 30/30/30, 60/30/30 and 60 pound wet strength Kraft or string filled for use as strapping tape. Adhesive is included. Made by **McLaurin-Jones Co.**, 1800 Stewart St., Brookfield, Mass.

▲ Mention Item NED-3349 when writing ▲

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SYNTHETIC SPONGE

Made from Koroseal plasticized polyvinyl chloride, this synthetic sponge is now available for essential industrial applications. Developed 18 months ago, material has been employed only in military equipment. Sponge is non-flammable and has same resistance to oils, greases, chemicals and oxidation as other Koroseal products. It can be made in various densities and pore sizes. Made by **The B. F. Goodrich Co.**, Dept. E, 500 S. Main St., Akron, O.

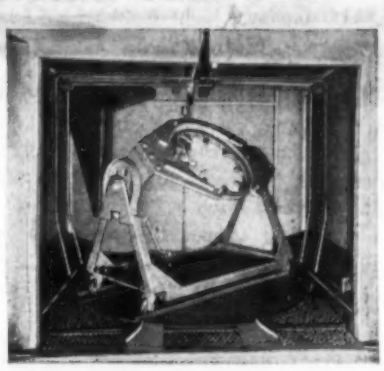
▲ Mention Item NED-3350 when writing ▲

TRACING CLOTH

Moisture resistant on both sides, Whitex white pencil tracing cloth guards against spots on blueprint due to climatic conditions or to perspiration or moist hands of draftsman. Hard pencil leaves sharp, jet-black image on cloth's fine-toothed surface. Smooth surface and transparency of this cloth assures prints that are etching sharp. Made by **The Frederick Post Co.**, Box 803, Chicago, Ill.

▲ Mention Item NED-3351 when writing ▲

AIRCRAFT ENGINE CLEANER



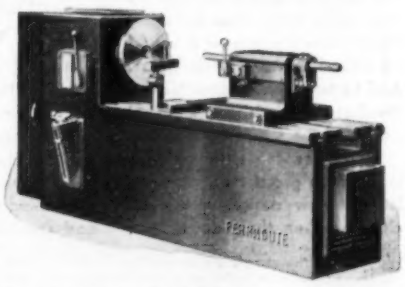
Providing uniform and continuous cleaning, cabinet type cleaning machine has turntable designed to hold aircraft engine and its assembly stand as it comes off production line. Table revolves at 4 to 6 revolutions per minute to produce complete wash, rinse and drying operations on one engine in about 20 minutes.

Wash and rinse solutions are both applied through one set of spray pipes which extend completely around engine and stand. High velocity air ejected through blow off nozzle dries excess water from engine surfaces. Machine illustrated is 13 feet high and is sunk 4 feet below floor level to conserve space and facilitate loading. Engine can thus be loaded into machine without lifting. Cleaner can also be used for airfield use, teardowns and assembly of engines or to wash small parts in baskets placed on turntable. Made by **Howard Engineering & Mfg. Co.**, 1042 Hulbert St., Cincinnati, O.

▲ Mention Item NED-3352 when writing ▲

METAL SPINNING LATHE

Safety of operation is assured in this model No. 224 spinning lathe through enclosure of most moving parts. Spindle speed is infinitely variable between 200 and 1000 revolutions per minute, adapting machine for wide variety of metals, sizes and purposes. Higher speed range is available on special order. All controls are conveniently located and include single lever operated brake and clutch for instantaneous starting and stopping.



Machine is designed for standard operations such as spinning, buffing, burnishing, trimming, wiring and beading. Distance between centers is 48 inches and maximum swing over bed is 24 inches. Standard motor is rated at 5 horsepower and operates on 220-440-volt, 3-phase, 60-cycle alternating current. Standard rest is of pin type, compound rest being available on special order. Made by **Ferracute Machine Co.**, Bridgeton, N. J.

▲ Mention Item NED-3353 when writing ▲

Read Carefully
CHECK AND PASS ON

CHECK	NAME AND TITLE	SEE ITEM NO.

KNEE-OPERATED SWITCH

Though primarily designed for use as foot switch, this Smith-Swich is being employed as knee operated control. It is being successfully applied on intermittent operation of drill presses, grinders, bench machines, solenoids and for controlling magnetic starters of larger machines.

Moisture and dust proof heavy duty case protects phosphor bronze springs and ¼-inch tungsten points. Contact capacity is 10 amperes at 125 volts and may be used on up to 40,000 operations per day within recommended limits. List price is $3. Made by **Nathan R. Smith Mfg. Co.**, South Pasadena, Calif.

▲ Mention Item NED-3354 when writing ▲

Do You Know?

■ ALMOST perfect protection against accumulation of static electricity is provided for workers in munitions plants and hospital operating rooms by new rubber heel which conducts electricity. Any static which would cause dangerous spark is carried off through conductive heel. Made by The Goodyear Tire & Rubber Co., 1400 Cartwright St., Akron, O.

▲ Mention Item NED-3355 when writing ▲

A national distribution service of motion pictures for war workers and their families has been established by the U. S. Navy. Film subjects will illustrate importance of worker to production and will depict close relationship between plant and shipyard workers and men of the fleet. Nominal charge is made to cover transportation handling, insurance, inspection and maintenance. Companies interested in securing this service for their plants should address their requests to: Industrial Incentive Div., Navy Department, 2118 Massachusetts Ave. N. W., Washington, D. C.

▲ Mention Item NED-3356 when writing ▲

Nicknamed the "Gibson Girl" because of its hour glass contour, a virtually foolproof emergency radio transmitter automatically sends out S O S signals over effective range of 100,000 square miles. Rotation of hand crank operates keying device for signals and supplies power through generator. Complete kit is being used by Air Forces for airmen forced down at sea. Made by Bendix Aviation, Ltd., 11603 Sherman Way, North Hollywood, Calif.

▲ Mention Item NED-3357 when writing ▲

Developed for educational use, a complete set of model airplanes consist of 78 plastic models of warplanes of all nations. Made to scale of 1 inch to 6 feet, planes are used for identification study in preflight training programs. Made by Central Scientific Co., 1702 Irving Park Rd., Chicago, Ill.

▲ Mention Item NED-3358 when writing ▲

with PLASTIC ROCK!

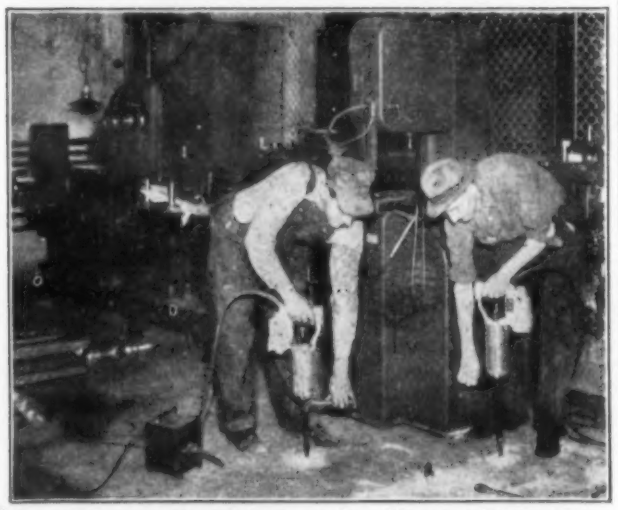
Trowel a smooth, tough, plastic surfacing right over your old concrete or wood floor.

Plastic Rock comes complete, packed in barrels. Nothing more to buy. No application "formula" to confuse you. Simply mix and trowel right over old floor. Average depth one-half inch. Old floor Saturday is a new floor Monday. Also patches concrete to a perfect feather edge. Plastic Rock is absolutely spark-proof, skid-safe wet or dry, dustless, silent. Feels like cork under foot. Cannot splinter, crack, crumble, curl or loosen. Heavy loads in steel wheels actually improve it. Five-year old floors show no wear. Natural color is dark gray. Also furnished in red, green and brown. Used by U. S. Army, Navy and largest industries in America. Your contractor or your own crew can apply.

Ask for your copy of Report 220-7

UNITED LABORATORIES, INC.
16801 EUCLID AVENUE • CLEVELAND, OHIO

▲ Mention Item NED-3359 when writing ▲



Installing Machinery in Your Plant?

SYNTRON

ELECTRIC HAMMERS

DRILL
ANCHOR BOLT HOLES
IN CONCRETE

Quickly—Easily—and Economically!

Write for your copy of catalog No. 430

SYNTRON CO., 405 Lexington Ave., Homer City, Pa.

▲ Mention Item NED-3360 when writing ▲

ARMOR-VIT

A NEW AND REVOLUTIONARY DEVELOPMENT IN *METAL FINISHES*

Here is a priority-free finish that is highly resistant to rust, corrosion, heat, impact, abrasion, scratch, acids and alkalis. It can be applied to practically any metal product by spraying, then cured through a heat cycle of from 250° to 700° F.

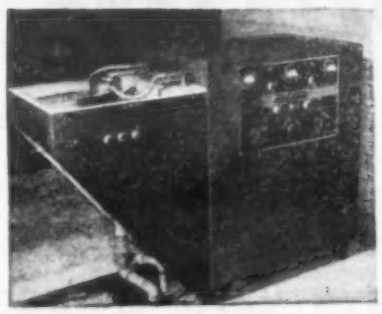
Although ceramic in nature, there is no comparison between ARMOR-VIT and porcelain enamel, paint, lacquer or synthetic finishes. It is non-volatile, non-explosive. It withstands heat of over 1000° F., and has high resistance to thermal shock. It is unaffected by the standard 200-hour salt spray tests, or weatherometer tests equal to 5 years normal weather. There are accredited ARMOR-VIT applicators convenient to your plant. Available in black, gray or olive drab. Send today for complete information.

ARMOR-VIT DIVISION

CHICAGO VITREOUS ENAMEL PRODUCT CO.
CICERO • ILLINOIS

▲ Mention Item NED-3361 when writing ▲

ELECTRONIC HEATERS



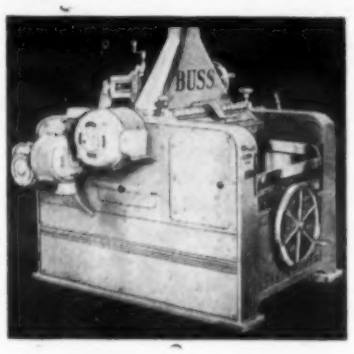
Essentially power oscillators which convert 60-cycle power to 500,000-cycle high frequency power, this line of electronic heaters is designed for induction heating of metal parts for brazing, soldering and selective heat treating. Two units are made, with outputs of 5 and 15 kilowatts.

Simple circuits are employed and necessary electronic tubes, controls and other equipment are arranged in compact, completely enclosed cabinets. When properly applied, tubes have life expectancy of 5000 to 10,000 hours or more. Attached to equipment is suitable work table with necessary water-cooled coils connected to heater terminals. Coils are readily fabricated to required shapes.

Claimed advantages of electronic equipment are rapid heating which can be confined to desired area, operation by unskilled operators after preliminary adjustments have been made, accurate and automatic control of amount of heat and its distribution, and conservation of critical alloy steels. Made by **General Electric Co.**, Schenectady, N. Y.

▲ Mention Item NED-3362 when writing ▲

WOOD SURFACER



Absolute accuracy, quick changeover and convenience of operation adapt this type 4-L wood surfacer particularly for pattern and jig making operations in large industrial plants, as well as for regular planing operations in wood working plants. It can be used for production work in all operations requiring up to 24-inch single head surfacer.

Motor driven and ball bearing equipped, machine has accurate inclined bed. Cutter heads have knife projection of 3/32 inch, giving full 5-5/16-inch cutting circle for smooth finish. Safety features include "No-Kick-Back" chipbreaker and baffles which prevent loose knots from carrying around and jamming between cutter head and pressure bar.

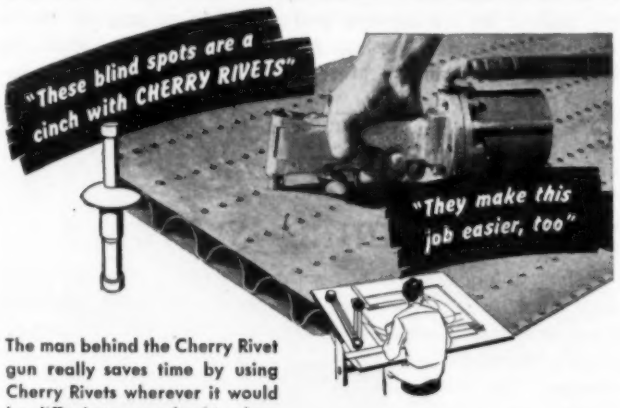
Micrometer central control permits accurate pressure application on back bar. Made by **Buss Machine Works**, 24 Eldon St., Holland, Mich.

▲ Mention Item NED-3363 when writing ▲

DO YOU KNOW?

Higher temperatures than those permissible with any commercial thermo-plastic powder can be withstood by new formulation of Lucite molding powder for plastic articles. This methyl methacrylate resin molding powder will be available for a number of peacetime uses. It will not distort or soften appreciably when exposed to temperature of 212 degrees Fahr. Made by E. I. du Pont de Nemours & Co., Plastic Dept., Wilmington, Del.

▲ Mention Item NED-3364 when writing ▲



The man behind the Cherry Rivet gun really saves time by using Cherry Rivets wherever it would be difficult to use a bucking bar. And he turns out a better job . . . thanks to the positive mechanical action of the Cherry Rivet.

To the engineer these rivets mean even greater advantages. He can now design up to efficiency rather than down to a manufacturing limitation. The high shear and fatigue values and the excellent shank expansion of Cherry Rivets eliminate the necessity of designing away from blind spots in both primary and secondary structures.

Get the complete story on Cherry Rivets. Sizes, styles of rivets, application techniques and riveting tools are fully described in the Handbook A-43. Request your copy from Department A-113, Cherry Rivet Company, Los Angeles, California.

CHERRY RIVETS, THEIR MANUFACTURE AND APPLICATION ARE COVERED BY U. S. PATENTS ISSUED AND PENDING.

Cherry Rivet Company
LOS ANGELES, CALIFORNIA

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ARMOR-PLATE *saves* LIFE AND LIMB

Another "ULI" sensation! Insurance against falls and injury—*wherever feet may slip.* Just spray or brush Armor-Plate on dangerous surfaces, and save limbs and lives. Abrasive texture like No. 3/0 emery cloth. For metal floor plates, stair treads, ramps, corridors, airplane wing "steps," ship decks, gangplanks, truck running boards, stepladders—wherever wet, oily or slippery surfaces hamper production and threaten life. Rust-inhibiting. Sticks to wood, metal, concrete, slate, and glass. Cost applied, less than 1c per sq. ft. Jobs three years old show no wear. Choice of gray, red, brown or green.

FREE—Report No. 419-G, applied sample attached

UNITED LABORATORIES, INC.
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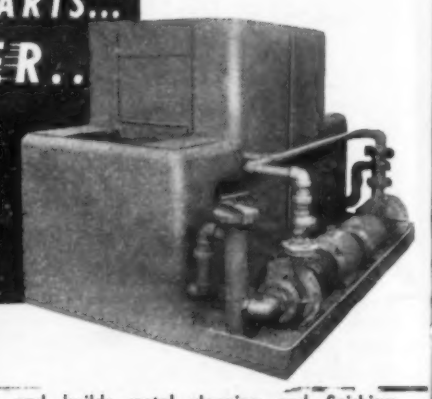
▲ Mention Item NED-3366 when writing ▲

CLEAN SMALL METAL PARTS... FASTER.. BETTER AT LOWER COST



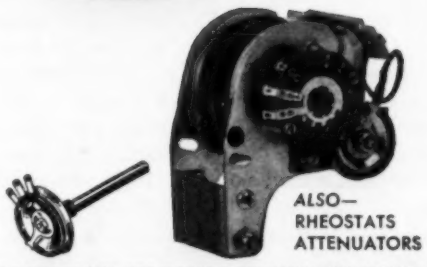
HOWARD designs and builds metal cleaning and finishing machinery for every purpose. This HOWARD machine combines cleaning operations adaptable to every metalworking plant, and effects considerable savings in floor space. Thoroughly washes and rinses small parts in baskets, large parts individually; roller conveyors speed handling and output; heats by gas, steam or electricity.

Write for details, or for analysis and solution of your cleaning or finishing problems—no cost or obligation. Catalog on request.

HOWARD ENGINEERING & MFG. CO.
1050 HULBERT CINCINNATI 14, OHIO
ENGINEERING for PRODUCTION CLEANING

▲ Mention Item NED-3367 when writing ▲

Utah POTENTIOMETERS



ALSO—
RHEOSTATS
ATTENUATORS

PRECISION MANUFACTURING ASSURES DEPENDABILITY

The dependability and high quality of precision-made Utah Potentiometers has been proved in the field. Resistance elements are clamped permanently in place. One-piece all-metal frames. Open construction gives maximum heat dissipation for their size. Contact arm can be furnished grounded or ungrounded.

If you have a problem, calling for precision-made electrical parts, why not take advantage of Utah's extensive experience. Utah manufactures a full line of potentiometers, rheostats and attenuators—as well as other electrical parts. Write today for full information—see how Utah precision manufacturing can benefit you.

UTAH RADIO PRODUCTS COMPANY
GENERAL OFFICES AND FACTORY
854 ORLEANS ST., CHICAGO, ILL.

▲ Mention Item NED-3368 when writing ▲

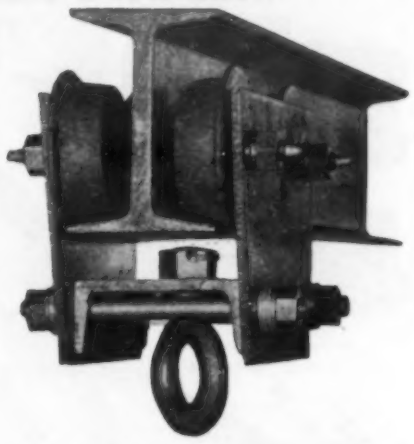
GRAY TROLLEYS

are
SAFE
and
EFFICIENT
with
CLOSE
HEADROOM

•

EQUIPPED
WITH
GRAY
Thoroughly Sealed
Ball Bearing
Trolley Wheels

•



Long trouble-free service is what you get with every Gray trolley equipped with new type, Gray ball bearing trolley wheels which take maximum radial and thrust loads. Gray trolleys are easily transferred through the shop and can be furnished in 250 lb. to 2 ton standard capacity sizes adjustable to suit various size I-beams. Write for illustrated bulletin describing features of Gray trolleys and trolley wheels.

GRAY HUB COMPANY
Incorporated 1922
7265-17403 GABLE AVENUE DETROIT, MICHIGAN

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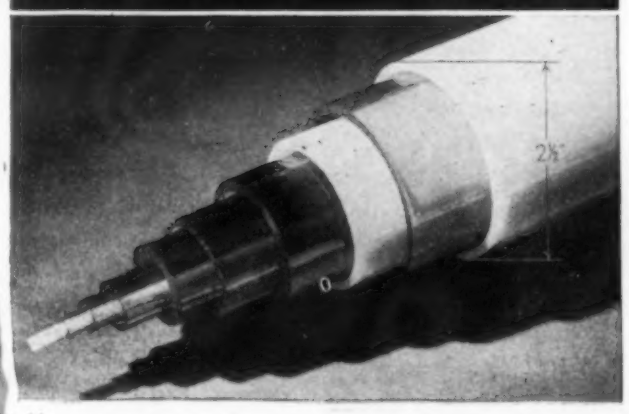
EXTRUDED PLASTICS, Inc.
New Canaan Avenue Norwalk, Conn.



Seamless
TULOX PLASTIC TUBING
REG. U. S. PAT. OFF.
Made to close tolerances from a number of base resins...in a full range of sizes from 3/16" to 2½" O.D.

TULOX HOLLOW ROD
REG. U. S. PAT. OFF.
Made from Tenite II
HEXAGONAL • KNURLED • ROUND

NATIONAL DISTRIBUTION—Immediate shipment from warehouse stocks for War Production. Illustrated catalog will be mailed on request of EXTRUDED PLASTICS, Inc., Norwalk, Conn.

IN CANADA: Sole Licensees, DUPLATE CANADA, LTD., Plastic Div. Oshawa, Ontario
EXPORT DEPT.: AMERICAN STEEL EXPORT CO., INC., 347 Madison Ave., N.Y.C.

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Remember
RITCO
for

SPECIAL BOLTS, NUTS and STUDS

Don't forget—we are well qualified in experience and equipment to supply special bolts, nuts and studs to your specifications . . . and can supply them NOW in limited quantities for war production. Let us know your requirements.

Remember RITCO *for*
SPECIAL BOLTS, NUTS & STUDS
DROP FORGING & DIE SINKING
SCREW MACHINE PRODUCTS
SPRAYED METAL SERVICE
HEAT TREATING • PARKERIZING
Estimates gladly submitted. Send samples or blueprints. Catalog on Request.

RHODE ISLAND TOOL CO.
148 West River St., Providence, Rhode Island
Serving American Industry Since 1834

RITCO

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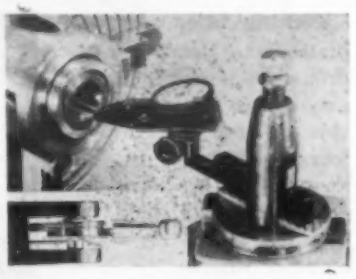
DIAL INDICATOR GAGE

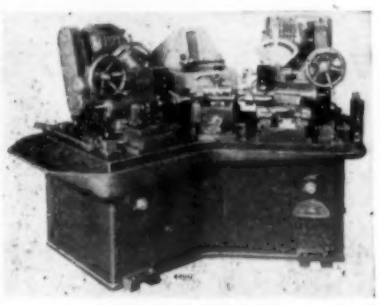


Design features of this Testmaster universal dial indicator include crown gear movement with minimum of friction and inertia, ratchet index point which can be set at any angle within 180-degree arc, and reversible point which is controlled by lever. Direct combination of lever and crown gear eliminates lost motion.

Four dial styles are available. Model 1 is graduated to 0.001 inch and has range of 0.03 inch. Model 2 is graduated to 0.0001 inch and has range of 0.008 inch. Corresponding metric models are also available. Regular equipment includes holding bar and universal clamp. Adaptors are available for use with surface and height gages which standard clamp and bar will not fit. Indicators are packed in durable plastic case. Made by **Federal Products Corp.**, 1 Reservoir Ave., Providence, R. I.

▲ Mention Item NED-3372 when writing ▲

CONNECTING ROD MACHINE



Small amount of excess stock which is left on each end of internal combustion engine connecting rod forgings for balancing purposes is removed in this balance-milling machine. Excess weight is accurately removed. Workpiece is first weighed and amount of excess stock on each end determined by means of double dial shadograph scale.

Piece is then clamped in fixture. By turning handwheel, operator advances finder which locates excess metal and flashes green signal light. Red light flashes if wheel is turned even 0.002 inch too far. This operation automatically brings cutting tool into perfect alignment with tip of finder. Operator then sets pointer on fan shaped dial above milling unit at amount of excess stock to be removed indicated by previous weighing.

When these settings are made on each end of machine, push button is pressed and feed cutters remove excess stock. This brings rod to correct balance weight within usual ¼-ounce limit. Made by **Snyder Tool & Engineering Co.**, 3443 E. Lafayette, Detroit, Mich.

▲ Mention Item NED-3373 when writing ▲

DO YOU KNOW?

Advantages which hard chromium lends to steel can be obtained on aluminum through application of recently developed hard chrome plating process. Plating thicknesses have been made up to 0.05 inch without hydrogen embrittlement, crazing or lifting. Process may be used on all forms of aluminum and aluminum alloys. Developed by Colonial Alloys Co., 2154 E. Somerset St., Philadelphia, Pa.

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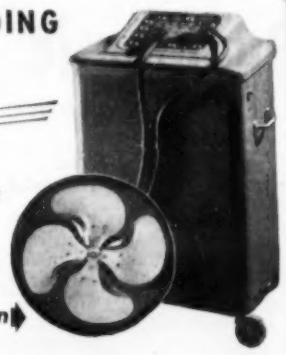
CONTINUOUS WELDING
NOW JUST A
BREEZE



New Ergolyte A.C. Arc Welder
Especially built for
Continuous War Time Duty
Air Cooled by Powerful Fan

Our fighting men need the stuff. They can't wait while naturally cooled machines "cool down". That's why we built into the new Ergolyte 250F a powerful cooling fan, added extra-heavy insulation. Avoid time delays, danger from burning out due to heat stress. Speed up war work. Make your next welding machine an Ergolyte 250F. Write for information today.

SPECIFICATIONS
Current Range: 15-250 Amp. Input Voltage: 230-460 Volts. Frequency: 60 cycles or to order. Phase: Single or operates on one phase of 2 or 3 phase current. Electrode size Range: 1/16"—3/16". Heat Steps: 24. Size: 18" x 13¼", height 31½". Weight: 215 lbs.

GUARANTEED ONE YEAR

ERGOLYTE MANUFACTURING COMPANY
3627 NORTH LAWRENCE STREET, PHILADELPHIA, PENNA.

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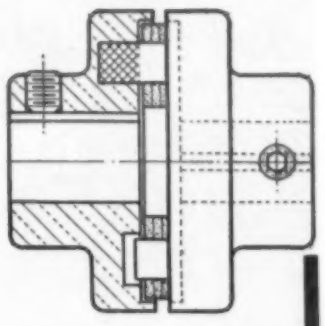
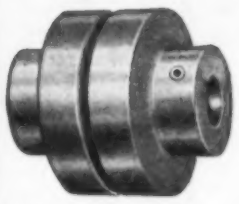
★ ★ ★ ★ ★ ★ ★

DIE-CAST *Flexible* COUPLINGS





Precision bored — Individually packed — No extra charge for combination of stock bores.

Dependable, low cost couplings for the lighter duty, constant speed application. A complete assortment of sizes and specifications ready for immediate shipment from stock.

Write us for our latest instructive catalog with recommendations for your specific requirements.

BROWNING MANUFACTURING CO., Inc.
Maysville, Kentucky

▲ Mention Item NED-3376 when writing ▲

CHICAGO MOUNTED WHEELS
THIS IS THE WHEEL* MR. JONES

• Maybe you were stumped by grinding jobs before, but they won't worry you any more.

300 shapes and sizes—every grade and grain—there is a Chicago Mounted Wheel custom-built to take on *any* grinding problem. Each wheel is a whirling point of power that turns your jobs out smooth—and in a hurry.

PROMPT DELIVERY

Action is the keynote from the moment your order comes in. Our wartime set-up concentrates on mounted points and grinding wheels 3" in diameter and under. —Production is stepped up and keeps pace with demand. Another advantage to you is our central location.

TEST WHEEL FREE — Tell us the job, type grinder and size wheel you use and we'll send one prepaid.

*Half a century of specialization has established our reputation as *the* small wheel people of the abrasive industry.

NEW CATALOG — Shows Chicago Mounted Wheels in actual colors, also portable electric tools and time-saving accessories.

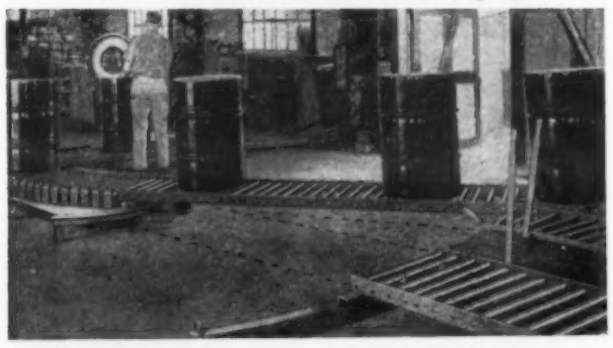
AMERICA'S HEADQUARTERS FOR MOUNTED WHEELS SMALL GRINDING WHEELS

CHICAGO WHEEL & MFG. CO.
1101 W. Monroe St., Dept. NE, Chicago, Ill

NE-7
☐ Send Mounted Wheel Catalog
☐ Free Wheel. Size.....
☐ Also interested in Grinding Wheels
Name .....
Address .....

▲ Mention Item NED-3377 when writing ▲

▲ Mention Item NED-3378 when writing ▲



MECHANICAL HANDLING *Saves* MANPOWER

IF depleted manpower is a production bugaboo in your war work, why not investigate the possibilities of handling materials, parts and products on a streamline conveyor system? Logan Conveyors are conserving manpower and are putting *flow* into the work of many of the nation's leading war plants. Your nearest Logan engineer can assist you in working out conveyor applications to meet your particular needs. For helpful examples of conveyor economies write today for *Key Book*. Logan, 215 Cabel, Louisville. Ky.

Logan Conveyors

▲ Mention Item NED-3379 when writing ▲

ELECTRICALLY HEATED
soft metal melting pot

For solder, lead, babbitt, tin, type metal—

Can be connected to any power line—

No flues or piping required—

No fumes, no flame hazard—

Quiet—no roar of combustion—

Jacketed insulation holds heat in the pot. Saves heat, guards operator's comfort—

Portable—larger sizes have convenient lifting lugs—

Available in seven sizes — capacities, 10 lbs. to 920 lbs. lead.

Smaller sizes have manual switch control. Larger sizes, thermostatically controlled.

Heated by enduring, economical, quick-heatin

CHROMALOX
ELECTRIC HEATING UNITS

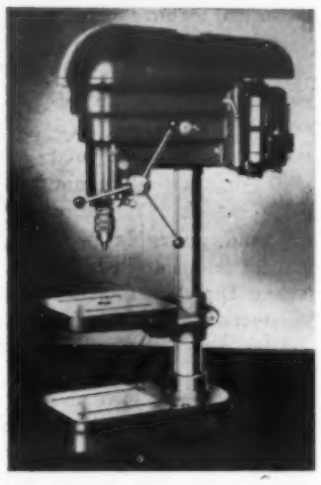
These units, in various types, have thousands of industrial applications. They heat water, oil, melt heavy wax, grease, heat machine parts, ovens, process jobs. Particularly valuable in small steam generators for process steam. Check with our consulting staff on any job you may have—get data on application, unit selection, operating cost. Write us stating conditions, and include pencil sketch of problem.

Many plant executives refer to the Chromalox Catalog of Electric Heat for valuable data — 64 pages, including heating diagrams, installation details, etc. On request.

EDWIN L. WIEGAND COMPANY
509 Thomas Blvd. Pittsburgh, Pa.

7 ▲ Mention Item NED-3380 when writing ▲

DRILLING-TAPPING UNIT



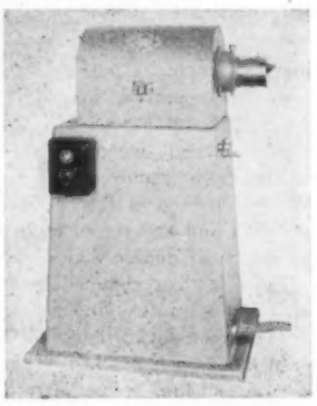
Perfectly balanced and vibrationless, Helmet Head drill press is offered in over sixty models. These are available in one, two, three or four spindle types; high and slow speed; bench or floor type; slotted or trough table. Press is sealed against all common hazards.

Five predetermined speeds allow for every operation. Outstanding feature is self-centering 30-degree pressure angle 6-tooth involute spline. Spindle, quill and spindle pulley are held in permanent, perfect alignment. Quill is held by three bearings, permitting long holes to be drilled accurately.

Tapping machines, designed for use with this press, operate at 3000 revolutions per minute "in" and 6000 revolutions per minute "out". Taps enter every hole centrally without strain. Two sizes are offered. Made by Boice-Crane Co., 951 Central Ave., Toledo, O.

▲ Mention Item NED-3381 when writing ▲

VARIABLE SPEED LATHE



Precise lapping and finishing of metal or plastic parts at speeds of 100 to 800 revolutions per minute is accomplished by Schauer VA3B-C Ideal variable speed lathe. It is especially effective on final operations of heavy work that requires burring, filing, polishing and lapping of gages, gears, pinions and pulleys.

Variable speed is obtained through Reeves drive which is operated by durable pulley belts, made to withstand strain of shifting infinitely variable speeds. Improved twin disc clutch assembly transmits power from continuously running motor to spindle of lathe when foot treadle is depressed. Spindle and holding devices are contained in separate welded steel housing which is mounted on welded steel floor type pedestal. Motor is easily accessible for replacement or removal. Made by Schauer Machine Co., 2063 Reading Rd., Cincinnati, O.

▲ Mention Item NED-3382 when writing ▲

DO YOU KNOW?

Four new 35-millimeter sound slide films describing use of gage blocks are now available. Presentation lasting over 1½ hours covers theory of gage blocks, how gage blocks are used, how gage blocks are made and the use of gage instruments. Available free for single showing or purchasable at cost for permanent use, films may be obtained from Savage Tool Co., 1314 Washington Ave. S., Minneapolis, Minn.

▲ Mention Item NED-3383 when writing ▲

ANNOUNCING A NEW

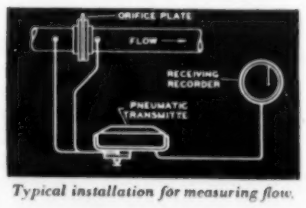
Pneumatic Transmitter

FOR MEASURING FLOW AND LEVEL

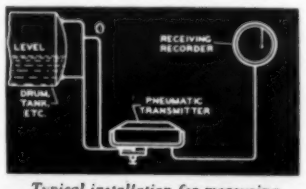
Operating On The Force-Balance Principle

The Republic Differential Pressure Transmitter is an entirely new type of pneumatic meter which has been thoroughly field tested during the past two years. It is a simple pneumatic device for converting a differential pressure, such as is produced by the flow of a fluid through an orifice or by liquid level in a vessel, into an air pressure which varies proportionately with the differential pressure.

This air pressure is used as a direct measure of the differential pressure and can be conducted to a remote location by means of tubing. A gage or receiver connected anywhere in this transmission line will show the variations in the differential pressure and may be graduated in terms of the flow or level which it represents. The pressure can also be utilized as the impulse for actuating a controller.



Typical installation for measuring flow.



Typical installation for measuring liquid level.

FOR COMPLETE DETAILS
Write For BULLETIN NO. 43-4

REPUBLIC FLOW METERS CO.
2244 Diversey Parkway • Chicago, Illinois

▲ Mention Item NED-3384 when writing ▲

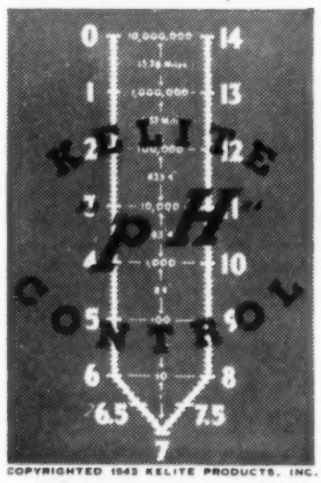
SAFE-LINE
WIRE ROPE CLAMPS

Write for details of this—the only PERFECTED wire rope clamp on the market. Used by the Armed Forces and thousands of industries.

NATIONAL PRODUCTION COMPANY
4603 ST. JEAN AVENUE DETROIT, MICHIGAN

▲ Mention Item NED-3385 when writing ▲

KELITE
SCIENTIFIC CLEANING THROUGH pH CONTROL



COPYRIGHTED 1943 KELITE PRODUCTS, INC.

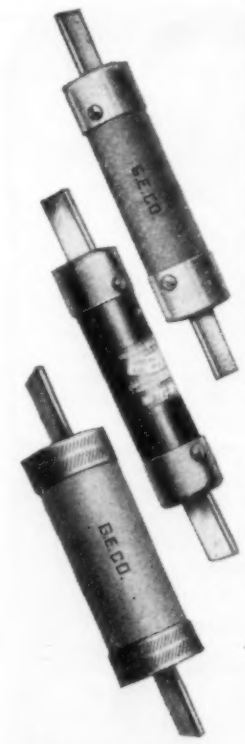
Discovery of the basic pH relationship between soils and the materials which remove them has placed cleaning processes on a scientific basis. And Kelite, pioneer in the application of pH Control to cleaning, has developed many new materials which speed production lines, and raise quality standards—

PROCESS K-1—to prepare aluminum for spot welding.
SCALE-OFF—to remove scale and rust.
KETREX—to remove grease, oils, light carbon.
SUPER KETREX—to remove heavy carbon and sludge.
KDL NO. 1—for hot tank cleaning of aluminum parts; and over 100 other advanced chemicals for cleaning and processing.

★

KELITE PRODUCTS, INC., 909 E. 60TH ST., LOS ANGELES, CALIF.

▲ Mention Item NED-3386 when writing ▲



G-E nonrenewable enclosed fuses, G-E renewable enclosed fuses, G-E Silvend fuses with silver-plated contacts—rated up to 600 amp. 250 V. or 600 V.

G-E FUSES
TO PROTECT ALL CIRCUITS

These are the same fuses General Electric uses to protect its own circuits. They provide reliable overload and short circuit protection. They are made of the finest materials and are thoroughly tested and accurately rated.

G-E Silvend fuses with silver-plated contacts are designed for use with apparatus having silver-plated fuse contacts. *Heating due to oxidation does not occur with this combination.*

For further information, see the nearest G-E Merchandise Distributor or write to Section D732-48, Appliance and Merchandise Department, General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC

▲ Mention Item NED-3387 when writing ▲

● In heat-treating carbon, alloy, and high-speed tool steels, you no longer need slow down operations to the capacity of the few experienced heat treaters available. With a Delaware Controlled Atmosphere Furnace, or a battery of these Furnaces, and the guidance of one experienced heat treater you can step up quality while using the inexperienced help of women. Delaware Controlled Atmosphere Furnaces insure high quality results.

BECAUSE: The new Delaware tangential firing method insures perfect temperature uniformity throughout the entire work area of the hearth.

BECAUSE: Its simplified atmosphere principle yields clean, scale-free, perfectly hard surfaces on all steels.

BECAUSE: With temperature automatically controlled, the heating operation consists solely in loading, timing and quenching.

If your work involves the heat-treatment of tool and alloy steels—from the simplest straight carbon type on through the various Moly high speed steels—you will be interested in the Delaware Controlled Atmosphere Furnace. Representing a development of many years of heat-treating experience, it embodies patented features which make it the most perfect heat-treating tool of its kind.

DELAWARE CONTROLLED ATMOSPHERE FURNACES

SEND FOR THIS BOOK—Fully describes the new method of heat treating that replaces human judgment with automatic control. Shows the flexibility of the Delaware Furnace. Illustrates features which simplify operations and procedure. The book is free. Send for it now.

DELAWARE TOOL STEEL CORPORATION
MANUFACTURERS OF FINE TOOLS SINCE 1918
WILMINGTON DELAWARE

▲ Mention Item NED-3388 when writing ▲

SUPER POWER EXTRA SPEED

GRINDS
MILLS
ENGRAVES
POLISHES
FINISHES

1/6 H. P.
35,000 R. P. M.
Weighs only 35 oz.

Operates at high speeds never equalled by any other electric hand tool. Weighs only 35 ounces yet develops 1/6 H.P. under full load. ● Higher speed means faster, better work; also cool working surfaces saving wear on wheels and cutters by as much as 50%. Cuts non-ferrous metals up to 350 Brinell hardness without heat.

WRITE TODAY FOR BULLETIN No. 33

No vibration. ***Guaranteed shock-proof without ground wire.*** Practically unbreakable Bakelite case is shaped to fit the hand. Women doing war work use it long hours without fatigue. Only three parts; no screws. Four ball bearings sealed in grease retaining chambers. Tool mounts in stand, vise, or lathe and operates on AC or DC.

New COOLFLEX flexible shaft attachment extends full power and speed of the PRECISE 35 to the small, cool-running handpiece. Only PRECISE 35 offers this advanced feature.

PRECISE PRODUCTS CORPORATION
713 Racine St. ◆ Racine, Wisconsin

THE PRECISE 35

▲ Mention Item NED-3389 when writing ▲

Easy steps - all in one unit -

INDUSTRIAL PRECISION CLEANING MACHINE

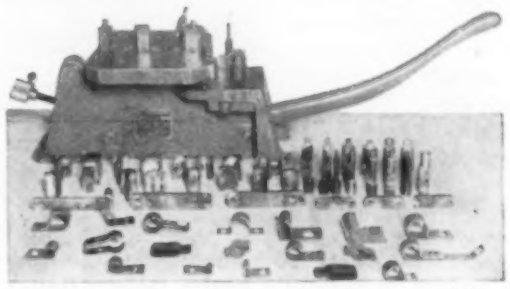
CLEAN and DRY instruments, meters, gauges, bearings — all small parts, *Speedily, Easily, Perfectly.* L & R is used by 100 Industries. Write for illustrated, descriptive literature. L & R chemists and engineers will help you.

L & R MANUFACTURING COMPANY
54 CLINTON STREET, Dept. 23, NEWARK, NEW JERSEY

▲ Mention Item NED-3390 when writing ▲

BENDER-CUTTER

Used for bending intricate shapes out of flat or round spring or cold rolled steel, copper or brass, heavy duty Multiform bender-cutter is furnished equipped with com-



plete set of dies and mandrels. Machine is especially useful for bending samples and short runs of 100 to 200 pieces, eliminating need for special forming dies. It relieves punch presses of valuable time for long production runs.

Adjustable stop at rear makes it possible to get different radii or angles with same set of dies or mandrels. Front head is removable giving clearance for using mandrels in forming any diameter circle. Triple toggle power gives adequate leverage. Made by **J. A. Richards Co.,** Corner Myrtle & Pitcher Sts., Kalamazoo, Mich.

▲ Mention Item NED-3391 when writing ▲

ELECTRIC WELDER

Automatically providing correct voltage for continuous range of currents available, this Ampac 200 alternating current welder facilitates welding at low currents because of high striking voltage and conserves power when welding at high currents because voltage is low. Other features include integrated reactor-transformer construction which provides high, safe voltage for easy welding at low currents; active duty from every flux line assured by reactor coils surrounding variable air gap, and simplified construction.

Welding current range is from 30 to 250 amperes. Machine will handle rods from 1/16 to ¼ inch in size for thin sheets or heavier plates. Made by **Allis-Chalmers Mfg. Co.,** 6900 Norman St., Milwaukee, Wis.

▲ Mention Item NED-3392 when writing ▲

DO YOU KNOW?

Copper mesh coated with synthetic rubber is claimed to add thousands of hours of service to certain gasket applications. Material is less than 0.015 inch thick and is replacing customary gaskets in aircraft engine crankcases. These gaskets are blowoutproof and prevent loss of oil by seepage. Distributed by The Detroit Gasket & Mfg. Co., Detroit, Mich.

▲ Mention Item NED-3393 when writing ▲

One Hour from Now
MAY BE TOO LATE!

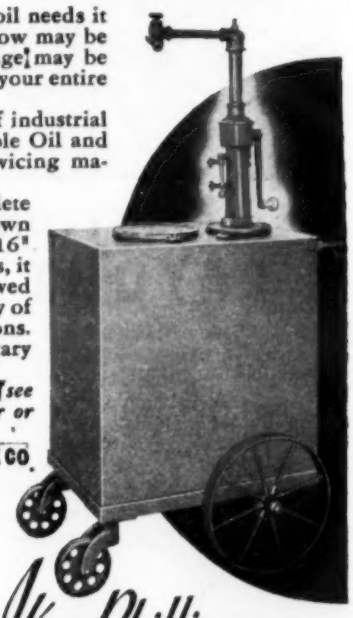
THE MACHINE that needs oil needs it now. One hour from now may be too late. Irreparable damage may be done and the production of your entire plant may be halted.

That is why thousands of industrial plants need Phillips Portable Oil and Solvent Dispensers for servicing machines quickly.

Typical of Phillips' complete line is the Model 81-GT shown at right. Equipped with 16" wheels and 6" swivel casters, it can quickly and easily be moved to any desired spot. Capacity of the tank is 65 or 120 gallons. Can be furnished with rotary pump—capacity 12 G.P.M.

For complete information see your mill supplies distributor or write

THE PHILLIPS PUMP AND TANK CO.
5004 Brotherton Road
Cincinnati, (Oakley Station) Ohio



DEPENDABLE PHILLIPS SERVICE STATION EQUIPMENT

It's a Phillips

▲ Mention Item NED-3394 when writing ▲

Jarvis POWER TOOLS

TAPPING ATTACHMENTS

AS the production of aircraft engines has increased, thousand upon thousand, to tremendous quantities, so also has the production of Jarvis Power Tools. Their output has kept in step with this greatly expanded aviation program.

Jarvis High-Speed Tapping Attachments are available in sizes from No. 2-56 to 2" capacity.

THE CHARLES L. JARVIS CO., MIDDLETOWN, CONN.
TAPPING ATTACHMENTS • FLEXIBLE SHAFT MACHINES • GROUND ROTARY FILES

▲ Mention Item NED-3395 when writing ▲

OUTLASTS

Half-A-Dozen Ordinary Gauges!

A Foxboro Model P Pressure Indicator is not only more dependable but more economical! Ruggedly, accurately made with all-welded, all-ferrous metal construction, it will outwear, "out-perform" several cheap gauges.

Unaffected by fumes destructive to instruments containing bronze or soldered parts; safer, too, in case of fire. Built for various ranges up to 10,000 pounds. Guaranteed accurate within 1% of scale range.

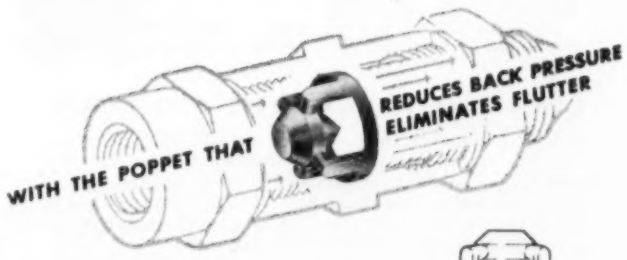
Write for detailed Bulletin 229-2. **The Foxboro Company, 134 Neponset Ave., Foxboro, Mass., U. S. A.** Branches in principal cities.

Availability of these instruments now temporarily restricted due to emergency war demands.

FOXBORO Reg. U. S. Pat. Off. PRESSURE INDICATORS

▲ Mention Item NED-3396 when writing ▲

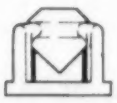
NEW A·S·P CHECK VALVE



ANY CONNECTION IN ANY DIRECTION

Engineering initiative in the application of the principle of interchangeability has produced the new A.S.P. Universal Check Valve for Aircraft Hydraulics. By the use of a standard body, made of heat treated aluminum alloy, and two of any three types of adaptors, six basic combinations of connections are possible with flared tubing or internal or external pipe threads.

Each adaptor is provided with a seat for the phenolic poppet (details at right). By reversing the position of the poppet, or by reversing the Valve assembly, the direction of flow can be changed, making 12 possible combinations. Simplified design has reduced weight 16%. Send for catalog.



FEATURES OF NEW A. S. P. POPPET

1. Small cone diameter, plus a cone in the Poppet streamlines the flow.
2. Fewer vanes, plus a radius on the cone end of the vanes materially reduces resistance.
3. Poppets will operate in any position, are unaffected by vibration or variable pressure.
4. Laboratory tests to 50,000 reciprocations at 275° F. developed no breakdown nor distortion.

AMERICAN SCREW PRODUCTS
7000 AVALON BOULEVARD • LOS ANGELES, CALIFORNIA

▲ Mention Item NED-3397 when writing ▲

The Ten Commandments of Conservation

Information supplied by an Industrial Publication

1. Don't specify high alloy steel when low alloy or plain carbon will do.
2. Use silver, lead, steel, brass for copper where possible.
3. Avoid the machining process when any other can be used for fabrication. Use brazed or welded stampings, or forgings, or die castings, or tubing instead of machined bar stock.
4. Keep tolerances within reason. Make specifications no more stringent than is necessary for the specific service, to reduce rejections.
5. Design for standard sizes and shapes. If this is impossible, try to have the supplier trim or shear to size for you.
6. Discard nothing of possible use. Cups, washers, tie-bands, pins, bushings can often be made from normally discarded trimmings of sheet metal, bar stock or tubing.
7. Keep non-ferrous chips separate from iron and steel borings and turnings, and keep the various grades of alloy steel separate. Higher prices for your scrap and better over-all conservation will result.
8. Appoint a salvage manager, with authority, to find and scrap all idle, unused and unusable machines and parts.
9. Don't spoil work. Look for practices that are causing high rejections and eliminate them mercilessly.
10. Be resourceful in reclaiming broken, worn and mismachined tools and parts by repair-welding, hard-facing, brazing, metal-spraying, hard-plating, etc.

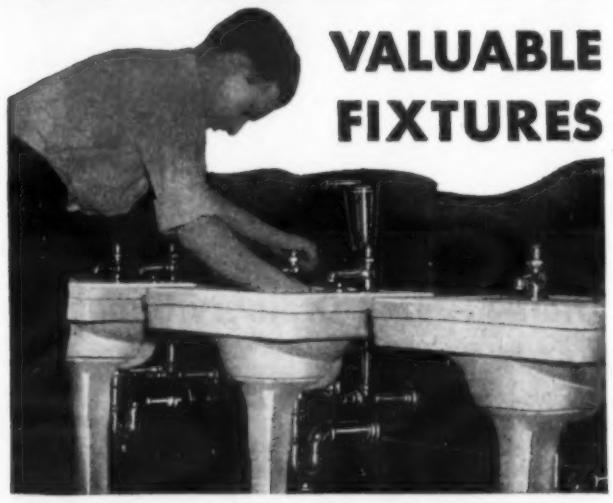
CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS. MOLYBDIC OXIDE, BRIQUETTED OR CANNED • FERROMOLYBDENUM • "CALCIUM MOLYBDATE"

MOLY

Climax Molybdenum Company
500 Fifth Avenue • New York City

▲ Mention Item NED-3398 when writing ▲

CONSERVE VALUABLE FIXTURES



DON'T YANK OUT OLD, WORN, LEAKY FAUCETS

Now you can re-form their rough, scored seats into smooth, round, precision surfaces, saving costly replacements and helping conserve war-needed materials.

This 'Sexauer' Pat'd. Precision Tool, used by maintenance engineers and master plumbers throughout the country, is guaranteed to re-form them *better* than when new. Thousands of these tools are in daily use from coast to coast, restoring discarded faucets to long and useful service.

HOLD REPAIRS TO A MINIMUM

After re-forming faucet seats, install Sexauer' Pat'd. EASY-TITE Washers. This new laboratory triumph is a resilient, synthetic compound, neither fibre nor rubber, which withstands extreme water temperatures (upwards of 300° F.)

Fabric-reinforced like a tire to prevent splitting and mushing out of shape, EASY-TITES outlast half-a-dozen ordinary faucet washers.

CUT MAINTENANCE COSTS TWO-THIRDS

A nearby 'Sexauer' Technician can aid you in stocking the *exactly correct* replacement parts, whatever the age or style of your fixtures. *Mail the coupon* and he'll call promptly—with samples and your copy of the new 64-page 'Sexauer' Catalog listing over 1,300 highly specialized items that conserve valuable fixtures and slash maintenance costs.

J. A. SEXAUER MANUFACTURING CO., INC.
DEPT. N7, 2503-5 THIRD AVENUE, NEW YORK CITY
"Specialists in Plumbing Maintenance Materials for Over 20 Years"

FOR MODERN PLUMBING CONTROL — MAIL THIS COUPON NOW!

Sexauer Mfg. Co., Inc., Dept. N 7
2503-5 Third Avenue, New York City

Send your nearest Technician with latest 'Sexauer' catalog and samples—also details of the 'SEXAUER-SYSTEM', a skillfully organized portable Kit of Precision Tools and 1,326 Triple-Wear Replacement Parts for efficient, one-trip repairs as advertised in THE SATURDAY EVENING POST.

COMPANY.....
INDIVIDUAL..... TITLE.....
ADDRESS.....
CITY..... STATE.....
Best Hour to Call.....

▲ Mention Item NED-3399 when writing ▲

PORTABLE EQUIPMENT HEATER

Originally developed for use by Armed Forces only, this self-contained portable heater is now available for commercial use. Army uses include preheating of airplane engines and heating of maintenance shelters. Industrial applications include heating and drying applications wherever auxiliary heat is required.

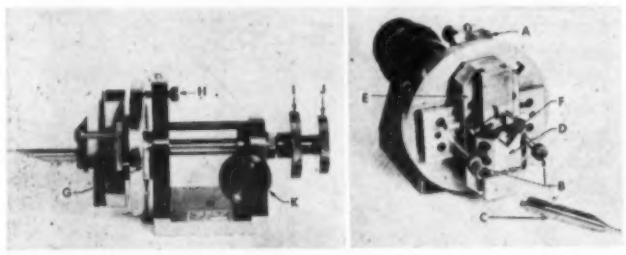
Engine uses gasoline, and heater unit uses gasoline in one model and No. 2 fuel oil in another model. Engine drives pressure type propeller which forces air over combustion chamber and out through two 12-inch diameter openings. Engine also drives small centrifugal fan to furnish combustion air. Several models are available with various systems of collapsible canvas duct work for conveying heated air.

Two retractable wheels afford portability. Heating capacity is 250,000 British thermal units per hour, discharging 2000 cubic feet of air per minute against ½-inch water pressure. Made by **The Herman Nelson Corp.**, Moline, Ill.

▲ Mention Item NED-3400 when writing ▲

PRECISION WHEEL DRESSER

Diamond tool can be automatically located on perfect center with this angle tangent to radius wheel dresser. This is accomplished by diamond mount construction and way in



which shank of diamond tool is ground. Front view of dresser shows 90-degree vee ground in dresser's diamond mount block and also two flats ground on diamond tool shank. When diamond shank is placed in position in 90-degree vee of mount block it automatically places diamond point in perfect center.

Dresser is of horizontal type. Thus wheel can be dressed at bottom where grinding operations actually take place. This allows wheel dressings to be thrown away from dresser into dust collector, rather than down onto dresser. Construction permits use of sine bar to insure accuracy of angles that ordinary vernier cannot calibrate. Made by **Perfex Gage & Tool Co.**, 3610 Gaylord, Detroit, Mich.

▲ Mention Item NED-3401 when writing ▲

DO YOU KNOW?

"Choosing of Women for War-Industry Jobs" is the title of special bulletin No. 12 of the Women's Bureau of the Department of Labor. Booklet explains job analysis as first step in placement process. Factors to be considered for proper job placement are discussed. Copies available for 5 cents by writing directly to Superintendent of Documents, Government Printing Office, Washington, D. C.

▲ Mention Item NED-3402 when writing ▲

Periodic Piece Inspection

IS FAST-EASY ACCURATE

with DAYTON ROGERS
LAYOUT FLUID

If you have sample parts or periodic piece inspection on production runs to check for accuracy, do it faster and better with this deep Die Blue Layout Fluid.

It dries as you brush it on. Your scribed check lines show clearly—no eyestrain. Also widely used for original layout work on steel, brass, aluminum, stainless steel, tin, copper by tool and die makers, machinists, model-makers and others.

PRICES—Handy 4 oz. Brush-in-Can, 40c. Pint, 60c. Quart, 90c. Gallon, $2.50. Circular on request.

DAYTON ROGERS MANUFACTURING CO.
2837 12th Ave. South
MINNEAPOLIS 7, MINN.

▲ Mention Item NED-3403 when writing ▲

NEED THESE?
(OR SIMILAR EQUIPMENT)

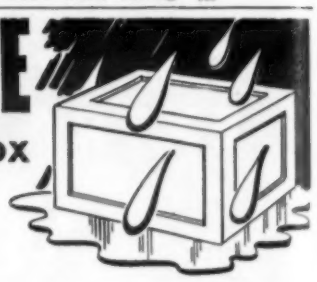
Making good power transmission equipment has been our business for generations and you will find Link-Belt serving industry faithfully and well wherever power is transmitted. The line is complete and stocks are maintained at all Link-Belt warehouses and many distributors. Send for copy of Catalog No. 850.

LINK-BELT COMPANY 9215
Chicago, Philadelphia, Indianapolis, Atlanta, Dallas, San Francisco, Toronto
Offices, warehouses and distributors in principal cities

LINK-BELT POWER TRANSMISSION EQUIPMENT

▲ Mention Item NED-3404 when writing ▲

CARBOZITE



WOOD CRATE & BOX COATING

- EASY TO APPLY
- FAST DRYING
- NEITHER CRACKS NOR PEELS
- MOISTURE PROOF AND WATERPROOF

Carbozite Wood Crate Coating is a specially developed and externally used coating for moisture-proofing and waterproofing wood crates and boxes. Carbozite Wood Crate and Box Coating is ideal for coating "green" or unseasoned wood as it seals-in natural moisture and prevents drying out, shrinkage and warpage. Can be sprayed with a high pressure gun and will dry to touch within approximately 30 minutes.

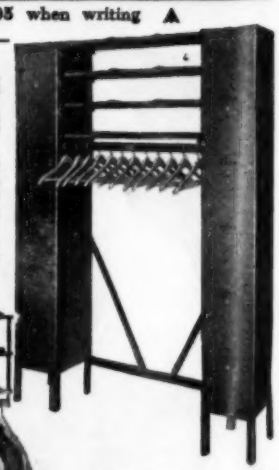
CARBOZITE SEALING MASTIC

Applied by trowel or pressure gun, creates a perfect seal and prevents moisture entrance where cracks and other irregularities occur in box construction. Remains pliable indefinitely and permits easy removal of cover or other parts of box. Forms a quick bond to Carbozite Wood Crate and Box Coating to form a complete effective seal.

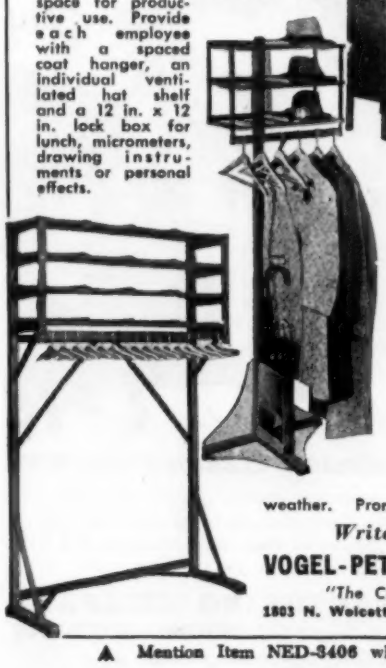
CARBOZITE CORPORATION
FIRST NATIONAL BANK BUILDING
PITTSBURGH, PA.

▲ Mention Item NED-3405 when writing ▲

New "Wood" Locker Unit accommodates 12 in 5 feet



The new hardboard and plywood Peterson Industrial Lockers come in both single and double (back to back) units that accommodate either 12 or 24 persons in every 5 running feet. Double locker room capacity and save valuable floor space for productive use. Provide each employee with a spaced coat hanger, an individual ventilated hat shelf and a 12 in. x 12 in. lock box for lunch, micrometers, drawing instruments or personal effects.



PETERSON Wardrobe Equipment is provided for factory, shop and office — comprises a complete line of single and double faced locker units, wardrobe racks and non-tipping (6 or 12 place) costumers. Keep wraps "in press", dry and sanitary—exposed to air and light. No crumbled hats or soggy lunches in stormy weather. Prompt delivery.

Write for Catalog
VOGEL-PETERSON COMPANY
"The Checkroom People"
1803 N. Wolcott Ave. Chicago, U.S.A.

▲ Mention Item NED-3406 when writing ▲

MAAS & WALDSTEIN
Announces
VICTORY WRINKLE FINISHES
—Without CHINAWOOD OIL

★ ★ ★

Because of a shortage of Chinawood oil the use of standard wrinkle finishes has been prohibited by the Government, except for a few special applications.

M&W research has developed a complete line of wrinkle finishes that contain no Chinawood oil but closely resemble our standard Duart wrinkle finishes in all other respects.

They form hard, durable coatings; they cover rough metal surfaces effectively in a single coat; they are applied in regular wrinkle patterns by the same methods; and they are supplied in a full range of colors.

Send for full information.

M&W

MAAS & WALDSTEIN COMPANY, NEWARK, N. J.
PRODUCERS OF LACQUERS, ENAMELS, SYNTHETICS AND SPECIALTY FINISHES FOR ALL PURPOSES
Branch Offices & Warehouses: 1638 Carroll Ave., Chicago, Ill. • 1228 W. Pico Blvd., Los Angeles, Calif.

▲ Mention Item NED-3407 when writing ▲

Have you a Tough metal cleaning problem?

These engineers can help you quickly—at no cost or obligation

If you want to cut your degreasing costs and speed up your metal-cleaning work—if you have a difficult metal-cleaning job that's giving you trouble—get in touch with us *at once!* There is a lot more to solving a degreasing problem than just buying some new degreasing equipment. Our engineers travel from coast to coast working on every possible type of metal-cleaning operation. They have licked some problems that were called impossible. They are *specialists* in *degreasing* with many years of experience in that field. They will tackle any job—without a penny of cost or obligation to you—*and we mean just that!* Write *today* telling us what your problem is—and you will get quick action!

Phillips Manufacturing Company
3430 W. Touhy Ave. Chicago, Illinois

Phillips MANUFACTURING COMPANY

▲ Mention Item NED-3408 when writing ▲

SALVAGE YOUR OIL

YM pays for itself in 3 to 12 months!

Today... more and more industrial firms of all sizes are *salvaging lubricating and hydraulic oils* with Y M Reclaimers! Y M restores aircraft engine and other oils to the same viscosity, fire and flash, neutralization number, precipitation number, emulsion test, etc., as the new parent oil. Investigate Y M now for the salvage of your used oils. Advise us the quantities of all oils available per week. Regardless of the oil volume—big or small—there is a Y M model to fit any requirements.

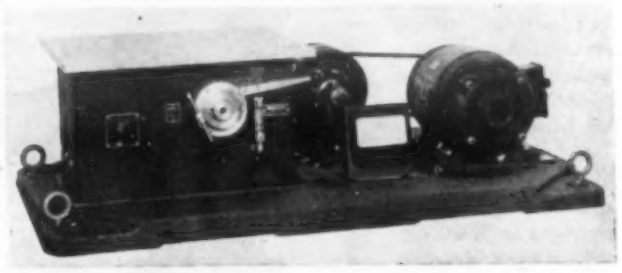
YOUNGSTOWN MILLER COMPANY
SANDUSKY, OHIO

YM OIL PURIFIERS AND RECLAIMERS
For Lubricating and Hydraulic Oils

▲ Mention Item NED-3409 when writing ▲

VIBRATION TESTER

Handling parts or assemblies weighing up to 100 pounds, model 100 vibration fatigue testing machine has adjustable frequency range from 10 to 60 cycles per second. Actual



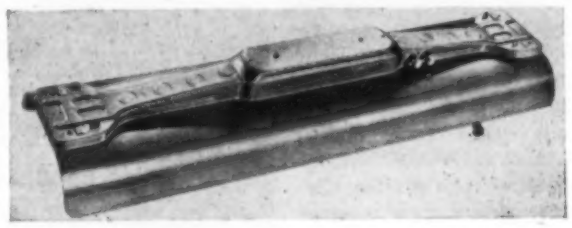
vibrations are recorded on electric tachometer. Displacement is adjustable for 0 to 0.125 inch and maximum capacity is 23G. Table measuring 15 x 18 inches has 115 tapped holes for bolting test assemblies to surface.

Power is furnished by 1½ horsepower motor. Eyebolts in base permit handling of machine with crane. Equipment is designed for use in laboratories or inspection departments for testing airframe or aircraft parts, navigation instruments, radio and electronic equipment, molded plastics and foundry cores. It may be used also for checking packaging to determine resistance to vibration. Made by **All American Tool & Machine Co.**, 1010 W. Fullerton Ave., Chicago, Ill.

▲ Mention Item NED-3410 when writing ▲

FLUORESCENT FIXTURE

Incorporating features of present and future design, this line of fluorescent fixtures meets limitations requirements of WPB. Model HF-100R uses two 40-watt lamps, and model HF-150R



is equipped with three 40-watt lamps. Model HF-235R uses two 100-watt lamps. All fixtures are available for 110-125 or 220-250 volts, 60-cycle alternating current.

Ballast is completely housed. Non-metallic reflector, anchored to top housing with easily operated latches, has Miracoat finish. Features include chain hanging ears on 43-inch centers; knockouts on 18, 24, 30 and 36-inch centers; channel for adjustable slide grip hangers and knockout for Levolier pull chain switch. Units can be joined with straps for continuous runs. Made by **Sylvania Electric Products, Inc.**, Fluorescent Fixture Div., Dept. RWS, Ipswich, Mass.

▲ Mention Item NED-3411 when writing ▲

DO YOU KNOW?

Ultraviolet rays to keep war workers in top physical condition are broadcast from low-cost miniature "lighthouse" Fifteen men or women can receive ultraviolet applications within a few minutes by standing in circle five feet from unit. Rays are produced by high pressure quartz mercury vapor lamp. Developed by Hanovia Chemical & Mfg. Co., 90 Chestnut St., Newark, N. J.

▲ Mention Item NED-3412 when writing ▲

▲ Mention Item NED-3413 when writing ▲

New HANDBOOK

Shows how to
IMPROVE MAINTENANCE
INCREASE PRODUCTION
SPEED CONSTRUCTION

Send for YOUR FREE COPY Today!

Includes 88 pages crammed full of descriptions and illustrations of Motor Maintenance and Repair Equipment for restoring peak efficiency without dismantling; Production Stripping and Soldering Equipment; Machine Tool Accessories; Wiring Devices and Tools.

Write for your copy today; no cost or obligation.

IDEAL Sycamore
★ IDEAL COMMUTATOR DRESSER CO ★
1032 Park Avenue Sycamore, Ill.
Sales Offices in All Principal Cities

▲ Mention Item NED-3414 when writing ▲

WE'RE SMASHING BOTTLENECKS IN MATERIALS HANDLING

with the CM METEOR heavy-duty ELECTRIC HOIST... ½ ton and up

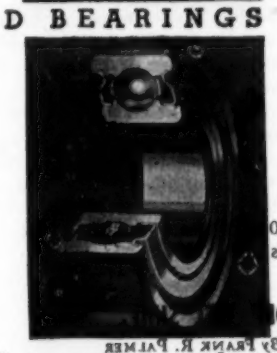
The new CM Meteor heavy-duty wire rope electric hoist is industry's newest recruit for speeding-up production...aeroplane type cooling...true balance... helical gears and one point lubrication provide fast materials handling with complete safety. Write for completely illustrated catalog.

CHISHOLM-MOORE HOIST CORPORATION
(Division of Columbus-McKinnon Chain Corp.)
120 FREMONT AVE. TONAWANDA, N. Y.
Branch Offices: NEW YORK • CHICAGO • CLEVELAND

▲ Mention Item NED-3415 when writing ▲

"9000" Series ("Feltless" but Interchangeable with Felt Seal Bearings)

SELF-SEALED BEARINGS



LARGER GREASE CAPACITY • NO SEAL DRAG

Employing simplified, inwardly extending, flanged metal seals which do not rotate and cannot "foul" other rotating seal parts, the "9000" Series is highly efficient in retaining grease in either horizontal or vertical position.

Seal [illegible] and power loss are definitely eliminated. Simple seal occupies less space than felt seal within the bearing [illegible] LARGER GREASE CAPACITY and a more lasting lubricant supply.

NORMA-HOFFMANN PRECISION BEARINGS
BALL, ROLLER AND THRUST
NORMA-HOFFMANN BEARINGS CORPORATION, STAMFORD, CONN., U.S.A.

▲ Mention Item NED-3416 when writing ▲

"HIS BOSS TOLD HIM NOT TO TAKE IT OFF UNDER ANY CIRCUMSTANCES"

. . . maybe "Buck" is carrying boss's orders too far; but in war work, good health comes first! No time for pneumoconiosis, silicosis or any of the other ailments caused by dust. Be wise, guard your lungs with . . .

DUPOR RESPIRATOR No. 40

U. S. Bureau of Mines Approved Protection for Type "A" dusts. Has over 40 sq. in. twin filter area. Weighs less than 4 oz. Price $30. doz. Sample sent postpaid $2.50.

H. S. COVER, Chippewa St., South Bend, Ind.

▲ Mention Item NED-3417 when writing ▲

PROTECT **VITAL** PARTS

with NEWARK *for* ACCURACY

WIRE SCREEN

What have we to offer?

- **Skilled Wire Screen Fabricators**
- **Modern Manufacturing Facilities**
- **Sixty-Six Years of Experience**
- **Priority Stocks of Wire Screen** with many meshes and wire diameters from which to select

That, in a nutshell, is what we have to offer. Can we serve you?

NEWARK WIRE CLOTH COMPANY
332 Verona Avenue, Newark, New Jersey

▲ Mention Item NED-3418 when writing ▲

How to TRAIN Tool Makers FASTER!

● Widely used throughout industry and trade schools, "Tool Steel Simplified" meets the urgent need for a complete, up-to-date text for training new men, "refreshing" older men, or trouble shooting in the tool room. Tells in easy shop language how to select tool steel, how to make tools, how to improve tool performance. It is available *at cost*, $1.00 per copy, to tool steel users in the U. S. A.

OVER 41,000 COPIES IN USE

TOOL STEEL SIMPLIFIED
By FRANK R. PALMER
Vice-President of
The Carpenter Steel Company
315 Pages 205 Illustrations
$1.00 Postpaid in U.S.A. Elsewhere $3.50

MAIL TODAY

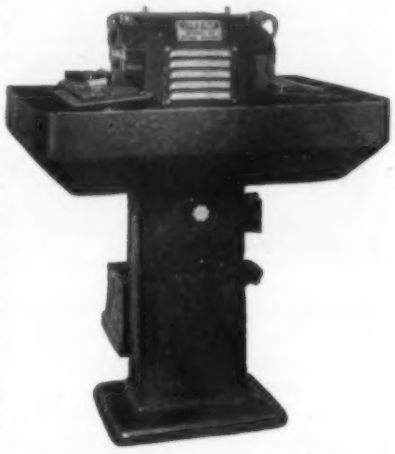
THE CARPENTER STEEL COMPANY
Reading, Pa. Dept. 19-A
Please send me postpaid a copy of "Tool Steel Simplified." I enclose $1.00 ($3.50 outside the U. S. A.) in full payment for the book.

Name_____ Title_____
Firm Name_____
Mailing Address_____
City_____ State_____

▲ Mention Item NED-3419 when writing ▲

CARBIDE TOOL GRINDER

Free hand grinding of tungsten carbide tools, as well as other hard metal tools requiring keen cutting edges and extreme accuracy is readily performed on this model 30 carbide tool grinder. It will handle rough, semi-finish and finish grinding. Rough and semi-finish operations are handled on 8-inch vitrified silicon carbide wheel. Six-inch diamond wheel is provided for finishing.



Cool cutting action is assured by steady flow of coolant, force fed by motor driven pump in reservoir attached to base of machine. Tilting tool rest table has angular adjustment of 30 degrees from horizontal. Wheels are driven by 220/440-volt, 60-cycle, three phase enclosed ball bearing motor. Made by Willey's Carbide Tool Co., 1340 W. Vernor Highway, Detroit 16, Mich.

▲ Mention Item NED-3420 when writing ▲

ARC WELDING CONTROL

Adaptable for use with any make or model of alternating current, transformer type arc welder, class 8992 safety panels eliminate hazard created by high open circuit voltages. Physical contact from electrode to grounded metal surfaces, when not welding, can result in operator's injury. These panels automatically disconnect welder transformer after arc is broken. Transformer is automatically reconnected the instant operator touches electrode to work. Arc is struck with no delay.

Because primary circuit is connected to power line only while arc is held, substantial saving in power is effected when number of welders are used on single power system. External connections are simple and internal connections of welder need not be disturbed. Made by Industrial Controller Div., Square D Co., 4041 N. Richards St., Milwaukee 12, Wis.

▲ Mention Item NED-3421 when writing ▲

DO YOU KNOW?

Designed for pasting adjacent to wall switches, arrow-shaped gummed sticker carries the message, "Please Turn Out the Lights—Save Power Needed to Win the War," as reminder to conserve electricity. Made by The Castle Island Press, 5417 W. Monroe St., Chicago, Ill.

▲ Mention Item NED-3422 when writing ▲

Up In the Air ? on Lifting and Piling ■

Then get a REVOLVATOR SKYSCRAPER Like This—or a smaller one to fit your needs. 32 models of

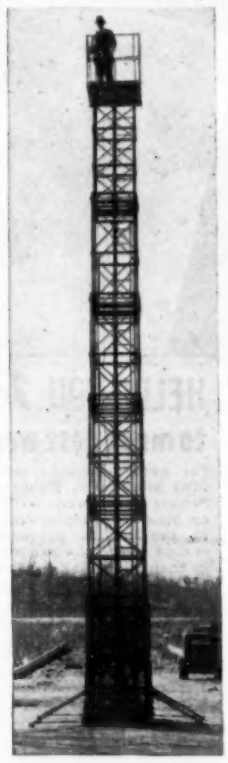
REVOLVATOR
REG. U. S. PAT. OFF.
PORTABLE ELEVATORS

fill all requirements, lifting 250 to 15,000 lbs. from 4 to 55 feet or over according to model.

Among the users of REVOLVATOR equipment are:

BENDIX AVIATION CORP.
BUICK AVIATION DIVISION
CURTISS-WRIGHT CORP.
(AEROPLANE DIVISION)
FAIRCHILD ENG. & AIRPLANE CORP.
REPUBLIC AVIATION CORP.
NORTH AMERICAN AVIATION CORP.
PRATT & WHITNEY CORP.
VEGA AIRCRAFT CORP.
ALLISON DIVISION—GMC
LOCKHEED AIRCRAFT CORP.
OTIS-AERONAUTIC DIVISIONS
WRIGHT AERONAUTICAL CORP.
BELL AIRCRAFT CORP.
UNITED AIRCRAFT CORP.

We also make RED GIANT LIFTRUCKS. Send for New Bulletin NED.



REVOLVATOR CO.
DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT
2032 86th St. NORTH BERGEN, N. J. Since 1904

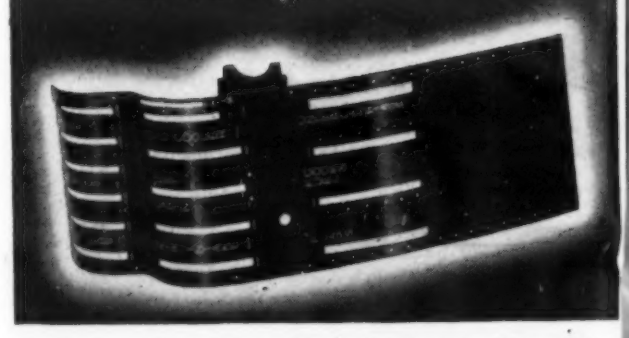
▲ Mention Item NED-3423 when writing ▲

Low contact drop and high current carrying capacity of Keystone Metal-Graphite Brushes assure minimized current loss. In addition, their excellent lubricating qualities are responsible for smooth running and long life. There is a Keystone Brush for all applications from fractional horsepower motors to large homopolar generators. Write for complete information.

Manufacturers of Precision Moulded Products
KEYSTONE CARBON CO., INC.
SAINT MARYS, PENNA.

▲ Mention Item NED-3424 when writing ▲

If you're thinking of
SWITCHING FROM METALS TO PLASTICS
Here's Important News



Technique developed for plastic printing plates now adaptable to metalworking field . . . conserves strategic metals, cuts costs

1. The untrimmed BAKELITE Plastic Matrix made from an etched copper pattern.

2. Matrix loaded with VINYLITE Molding Compound.

3. VINYLITE Plastic panel is quickly separated from matrix.

4. Intaglio lettering is readily filled in with pigment "wipe".

5. Panel is curved to final shape.

BY ADAPTING VINYLITE Plastics to the manufacture of control panels, Teleflex, Ltd. is releasing large quantities of sheet metal and is effecting considerable savings in time and labor. The intricate control panel is quickly and economically molded by the same technique that is utilized in the production of plastic printing plates.

First, a BAKELITE Phenolic mold or matrix is made from an etched copper plate which is used as the original pattern. This matrix-forming operation is completed under heat and pressure in about 15 minutes. The matrix is hard and durable and will retain its accurate reproductive qualities indefinitely.

Second, the control panel is formed by distributing VINYLITE Molding Compound evenly over the face of the matrix and placing the assembly in an hydraulic press. Under heat and pressure, the VINYLITE Molding Compound softens and flows into every minute crevice of the matrix, reproducing with absolute fidelity holes, slots, and markings, including the intaglio lettering.

Upon removal from the press, the panel is readily separated from the matrix and is subsequently curved to final shape on a wooden mandrel. The lettering is filled in with a pigment "wipe" and, except for removal of mold flash, is ready for installation. Such operations as anodizing, polishing, machine engraving, and other finishing steps, formerly necessary with metal, are avoided.

Thus, a technique developed for the printing plate industry can be adapted immediately to other unrelated industrial operations where the many outstanding characteristics of VINYLITE and BAKELITE Plastics can make possible manufacturing economies, high-speed production, and definite savings in critical metals.

Write Department 8 for further information on VINYLITE Plastics and the numerous benefits which they may be able to contribute to your essential products. Also write for Booklet 8, "Vinylite Resins—Their Forms, Properties and Uses."

Plastics Division
CARBIDE AND CARBON CHEMICALS CORPORATION
Unit of Union Carbide and Carbon Corporation
UCC
30 EAST 42ND STREET, NEW YORK, N. Y.

Vinylite
TRADE MARK
ELASTIC PLASTICS . RIGID PLASTICS
RESINS FOR ADHESIVES
RESINS FOR SURFACE COATINGS

*The words 'Bakelite' and 'Vinylite' are registered trade-marks of Units of Union Carbide and Carbon Corporation

▲ Mention Item NED-3425 when writing ▲

THERE'S A SAFETY STEEL STAMP FOR

STAMPING SURFACES

Whatever the shape, there's a Safety Steel Stamp that will do a better marking job. . . for you.

Skilled Cunningham Craftsmen are available to help you with your standard or special marking problems.

And remember, Cunningham Safety Steel Stamps neither spall nor mushroom!

M.E. CUNNINGHAM CO.
SAFETY STEEL STAMPS
115 E. Carson St., Pittsburgh, Pa.

▲ Mention Item NED-3426 when writing ▲

▲ Mention Item NED-3427 when writing ▲

New! Wakefield COMMODORE INDUSTRIAL UNIT

- Gives 86% of light from bare bulb . . 75% down; by E.T.L. test
- Plaskon reflector means light weight
- Only 13 oz. of steel . . helps WPB conservation
- Gives light up, as well as down
- No dark ceilings; no eyestraining contrasts
- Easy to clean . . easy to handle
- For lamps from 200 to 500 watts

Write for Details

ARMY E NAVY
For Outstanding War Production

THE F. W. Wakefield BRASS COMPANY
RED SPOT LIGHTING FOR COMBAT OPERATIONS AND WAR PRODUCTION
VERMILION, OHIO

▲ Mention Item NED-3428 when writing ▲

ENCLOSED ELECTRIC MOTORS

Designed for use under conditions where abrasives, chemicals, rain, snow, and excessive dirt are encountered, Tri-Clad totally enclosed motors are available in both polyphase, 60-cycle, induction type and single-phase, 60-cycle, capacitor type. Motors range from ½ to 2 horsepower and vary in speeds from 900 to 3600 revolutions per minute.

All parts of motor enclosures are cast iron, thus offering resistance to rust, corrosion, accidental blows and rough use. Motors are wound with Formex wire. Leads are encased in compound in cast-in pocket in stator frame. Made by **General Electric Co.**, Schenectady, N. Y.

▲ Mention Item NED-3429 when writing ▲

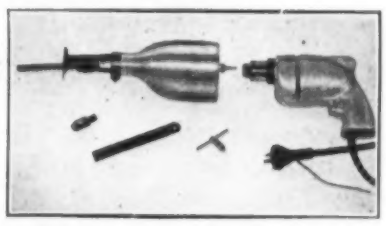
LIQUID FLOW INDICATOR

Of improved design, this flow indicator is used for determining flow of water and other free-flowing liquids. It is applicable for flow measurement in food, process, chemical and other industries. Sizes are available for maximum flows of 10 to 600 gallons per minute.

Installed directly in pipeline, it reads over full range of uniformly graduated scale from zero to full flow. Water enters indicator below plunger and forces it upward amount proportional to flow. Only three moving parts are used. Made by **Henszey Co.**, Watertown, Wis.

▲ Mention Item NED-3430 when writing ▲

RECIPROCATING TOOL



Attached to any electric drill, flexible shaft or compressed air tool, this Saw-Gun becomes portable power saw or file. It is adaptable for panel notching, slotting or other fabricating operations in plastics, stainless steel or steel plate in heavy gages. No drilled hole is needed for starting cut in wood or plastics. Tool is particularly applicable for working in close quarters.

Recommended for use on drills having speeds in excess of 2000 revolutions per minute, device is easily attached and simple to operate. List price is $40. Supplied complete with heavy duty portable electric drill, it is priced at $85. Made by **Mid-States Equipment Co.**, Dept. NED, 2429 S. Michigan Ave., Chicago, Ill.

▲ Mention Item NED-3431 when writing ▲

"GREEN HANDS FROM TRAINING SCHOOLS COULDN'T BURN TOOLS"
(Highlights from actual field report)

THE JOB: Grinding free hand and dry on Excello Tool Grinder carbide-tipped tools 1" x 1" x 6", for turning airplane struts, shaping airplane carburetors, shaping and turning gun turrets for planes.
THE WHEEL: POR-OS-WAY—10" x 2" x 2" C54KV3.

THE RECORD	POR-OS-WAY WHEEL	FORMER WHEEL
Number tools per hour per man	37	26
Number of dressings required	None	Every 2 hours
Pieces per wheel	888	520
Stock to be removed	.000"—.250"	Same
Wheel life	24 hours	20 hours
Depth of cut	.002"—.010"	Tools burned when jammed into wheel
Number of passes required	12	48
Amount of rejects	0	50 per day (scrapped)
Increase in production	42.3%	——

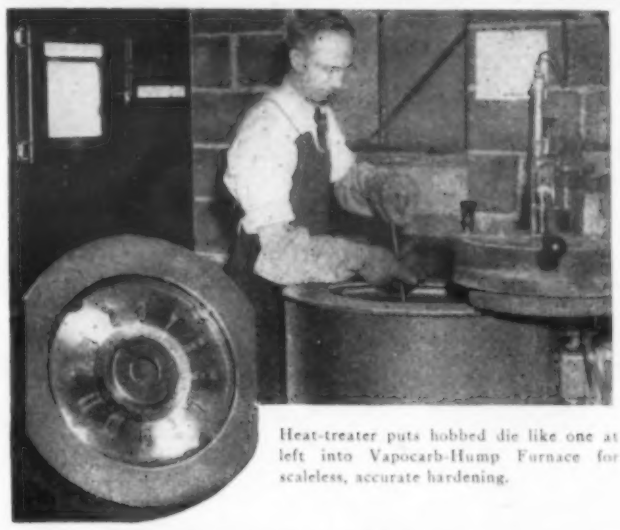
2 TO 5 TIMES MORE WAR PRODUCTION PER MAN PER MACHINE

A. P. DE SANNO & SON, INC.
408 WHEATLAND STREET
PHOENIXVILLE, PENNSYLVANIA
Offices and Warehouses in Principal cities

Copyr., 1943, A. P. de Sanno & Son, Inc.
*T. M. Reg. U.S. Pat. Off.

POR-OS-WAY* a new RADIAC* PRODUCT

▲ Mention Item NED-3432 when writing ▲



Heat-treater puts hobbed die like one at left into Vapocarb-Hump Furnace for scaleless, accurate hardening.

FOR WAR-BUSY TOOLROOMS

The Vapocarb-Hump Hardening Method enables American Insulator Corp., New Freedom, Pa., to do the double job of hardening hobs and carburizing the hobbed dies, without a single case of premature failure of a hob or of pitting or scaling of either hob or die. The Method is described in Catalog T-621, or, if you have a specific problem, outline it to us and we will promptly send specific recommendations.

LEEDS & NORTHRUP COMPANY, 4901 STENTON AVE., PHILA., PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
Jrl Ad T-621(30b)

▲ Mention Item NED-3433 when writing ▲

America's finest complete service

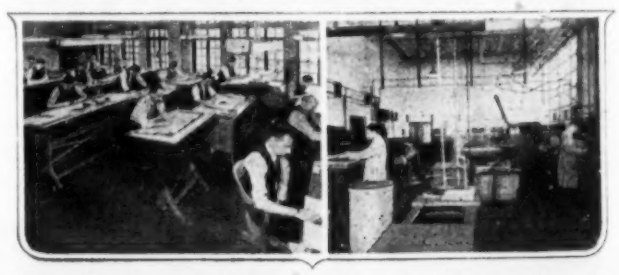
to the Plating, Polishing and Anodizing Plants

UDYLITE has everything for the metal finishing plant. An Engineering Staff with years of practical experience to assist you in laying out your new plant or improving the efficiency of your present one.

Equipment for every need, that has proved its dependability in actual service records.

A very complete list of supplies second to none in quality. If you have a metal finishing requirement or a tough problem bring it to Udylite. Our experienced engineers and electro-chemists are at your service. Your inquiry will be handled promptly and efficiently.

THE UDYLITE CORPORATION
1651 East Grand Blvd. • Detroit, Michigan



Part of Udylite's design and layout department where you may obtain the advice and assistance of experienced metal finishing engineers.

This is the laboratory where all Udylite products are developed and constantly tested under actual plant operating conditions.

▲ Mention Item NED-3434 when writing ▲

Chicago Rivet AND MACHINE CO.
9606 W. JACKSON BLVD., BELLWOOD, ILL. (Chicago Suburb)
TUBULAR AND SPLIT RIVETS IN ALL RIVET METALS

▲ Mention Item NED-3435 when writing ▲

THE ALDRICH-GROFF CONTROLLABLE CAPACITY... "POWR-SAVR" PUMP for Extrusion Press Service

Designed to handle any free-flowing liquids at discharge pressures ranging from 200 to 15,000 p.s.i., the Aldrich-Groff "Powr-Savr" Pump for main boiler feed, pipe line and desuperheating service will also meet practically any extrusion press requirement. Its advantages for this service include extreme simplicity and accuracy of control, elimination of by-pass valves and substantial power savings.

In sizes from 10 to 100 H. P. Write for Data Sheet 65.

THE ALDRICH PUMP COMPANY
4 GORDON STREET • ALLENTOWN • PENNA.

▲ Mention Item NED-3436 when writing ▲

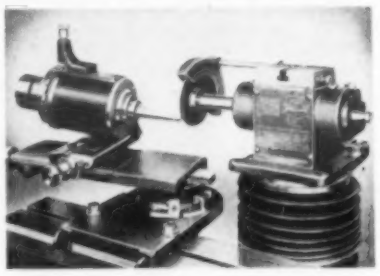
WALDRON SILENT STEEL GEARS

Steel laminations separated by a graphite film reduces noise vibrations. This construction maintains true profile of teeth and prevents breakage. Result—strength, quiet operation and greatly increased life. Send for Catalog 71.

JOHN WALDRON CORP.
NEW BRUNSWICK, N. J.

▲ Mention Item NED-3437 when writing ▲

RADIUS GRINDING ATTACHMENT

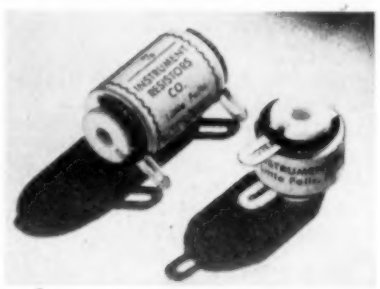


Wide range of cutters may be ground with this No. 1 radius grinding attachment which is designed especially for use on No. 2 cutter and tool grinder. Grinding of ball end cutters and die sinking cutters is facilitated. Through use of accessory equipment, double end cutters, cylindrical grinding of die sinking tracer fingers and similar work can be handled.

Index plate permits grinding of straight flute cutters having up to 24 flutes. Universal tool rest is supplied for grinding spiral flute cutters. Accessory equipment includes motor for cylindrical parts, collets and sleeves for straight and taper shank cutters, and stop collar. Capacity of attachment is 3-inch diameter ball nose cutters. Taper in work spindle is No. 5 Morse. Made by **Cincinnati Milling Machine Co.**, Marberg & South Sts., Cincinnati, O.

▲ Mention Item NED-3438 when writing ▲

ELECTRICAL RESISTORS



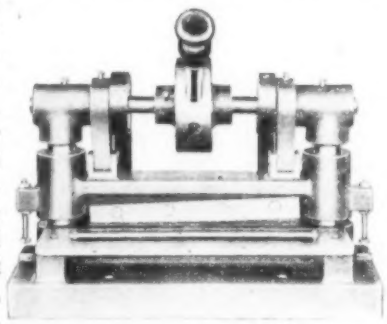
Having slotted-terminals, In-Res-Co. resistors are designed for precision apparatus and equipment. Type P-2 is rated at ½ watt with maximum resistance of 500,000 ohms. It measures 9/16 inch long by 9/16 inch in diameter. Type P-4 is rated at 1 watt, has a maximum resistance of 1 megohm and measures 1 inch long by 9/16 inch in diameter.

Terminals of both units are 0.025 hot tinned copper, slotted to take stranded or solid wire. Mounting is effected by No. 6 holes through centers of bobbin. Made by **Instrument Resistors Co.**, 23 Amity St., Little Falls, N. J.

▲ Mention Item NED-3439 when writing ▲

PRECISION SHEAR

Of improved design, this No. 2 Di-Acro shear will handle up to 22-gage steel plate, 9 inches wide. It is suitable for precision work on light and medium weight metals and materials. Machine can be quickly adjusted for shearing, squaring, slitting, stripping or notching to close tolerances.



Reversible shear blades are of tool steel, hardened, tempered and ground. Die accuracy is provided by simple adjustment of material guides, blade pitch and stops. Made by **O'Neil-Irwin Mfg. Co.**, 320 Eighth Ave. S., Minneapolis, Minn.

▲ Mention Item NED-3440 when writing ▲

CRESCENT
GIVES YOU THE RIGHT CABLE FOR THE RIGHT JOB
These Are Two Among Many

VARNISHED CAMBRIC POWER CABLE

A widely used cable for general industrial power purposes. Varnished Cambric insulation provides higher current carrying capacity for same size of copper conductors.

"CRESFLEX" NON-METALLIC SHEATHED CABLE

A factory-assembled wiring system that is easily installed at low cost. Especially suitable for war housing, industrial and all interior wiring. Uses no steel or zinc.

CRESCENT INSULATED WIRE & CABLE CO.

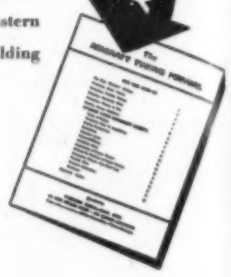
CRESCENT WIRE and CABLE
Factory: TRENTON, N. J.—*Stocks in Principal Cities*

▲ Mention Item NED-3441 when writing ▲

New Aircraft Tubing Manual

A complete thirty page handbook describing practical shop-proven methods for handling, storing, protecting and installing metal and flexible tubing. Including sections on insuring the precise torquing of all types of fittings and bolts . . . how to ship hydraulic units . . . photographs of work in progress . . . detail charts . . . sectional figures analysing proper tubing procedure and other valuable reference material. Available at no charge or obligation when requested on your firm letterhead. Address: TUBING SEAL-CAP, INC.—215 WEST 7TH STREET—LOS ANGELES, CALIFORNIA. Eastern Representative—428 New Center Building—Detroit, Michigan.

SEND FOR THIS TODAY



▲ Mention Item NED-3442 when writing ▲

SAFE

DAYTON SAFETY LADDERS have every advantage

No extra man needed to steady — Roomy platform for men and tools—Great strength, yet lightweight. Guard rails on platform. Automatic locking. Folds compactly.

Airplane spruce used throughout — Steel braces—Safety shoes. In sizes 3′ to 16′ in height — Elevating platform adds height.

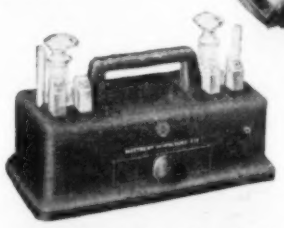
Write today for Free Catalog—Prices.

DAYTON SAFETY LADDER Co.
121-22 W. 3rd ST. CINCINNATI, OHIO

▲ Mention Item NED-3443 when writing ▲

Amazing S-22 Synthetic
ETCHING STAMPS

Thousands of our new "S-22" Synthetic stamps now in service have proved that this new material outlasts rubber or other synthetics by from 3 to 4 times, when used with acid etching inks. Order "S-22" next time you need inspection stamps.



INSPECTOR'S KIT

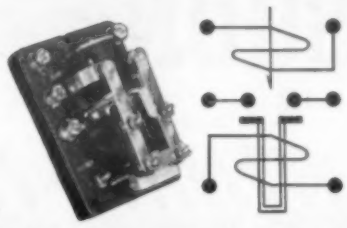
Made of acid proof, non-critical material, this new Kit holds stamps, etching ink, ink pad and neutralizer. Inexpensive, compact and convenient. Write for quotation.

Write for Bulletin S--Catalog 146

This valuable bulletin illustrates the various styles of stamps available. Write for your copy today.

JAS. H. MATTHEWS & CO.
3943 Forbes Street Pittsburgh, Pa.
Branch Plants
New York, Boston, Chicago, Philadelphia, Newark, Syracuse
District Sales Offices
Cleveland Detroit Hartford Birmingham

▲ Mention Item NED-3444 when writing ▲



DUNCO "MEMORY" RELAYS

Mechanical Latch-in, Electrical Reset

Dunco Mechanical Latch-in, Electrical Reset Relays are made in both large (Series 5) and "midget" (Series 51) sizes and with every conceivable contact arrangement. Energizing the lower coil closes the armature which is automatically latched in place until it is re-opened by energizing the upper coil. Thus the contact "remembers" which coil was last energized and remains in position until it is released by energizing the other coil.

These units as well as hundreds of other Dunco Relays, Timers, and Solenoids for a wide variety of uses, are described in the 48-page Dunco Catalog and Relay Data Book. Copy upon request. Please mention company connection.

WRITE TODAY!

STRUTHERS DUNN, INC.
1321 ARCH STREET, PHILADELPHIA, PA.

▲ Mention Item NED-3445 when writing ▲

DESIGN ENGINEERS

CAN YOU USE A RESISTANCE MATERIAL in which I varies as E^4?

Thyrite may be the answer to some of your circuit problems. It is a silicon-carbide ceramic material, dense and mechanically strong, having nonlinear resistance characteristics—the resistance varying as a power of the applied voltage. Its resistance characteristic is stable, and substantially independent of polarity or frequency. Thyrite* has been used for many years in important applications, including electronic. It can be produced in various shapes and sizes (those which can be successfully molded).

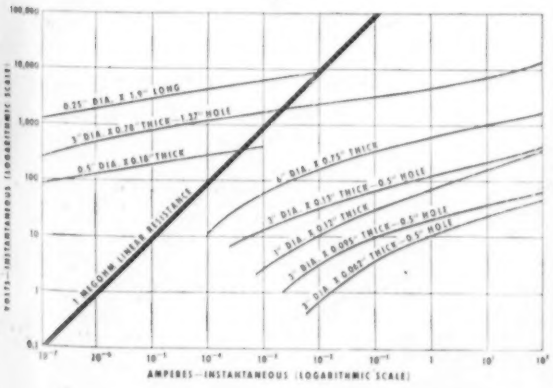
Some of its MANY APPLICATIONS

For protective purposes (to limit voltage surges).

As a stabilizing influence on circuits supplied by rectifiers.

As a potentiometer. (The division of voltage can be made substantially independent of load current.)

For the control of voltage-selective circuits, either independent of or in combination with electronic devices.



Typical volt-ampere characteristics of Thyrite resistors of several resistance levels and power ratings. Note that the nonlinear voltage-current characteristic extends over an extremely wide current range. Compare it with the characteristic (heavy line) of a 1-megohm linear resistor.

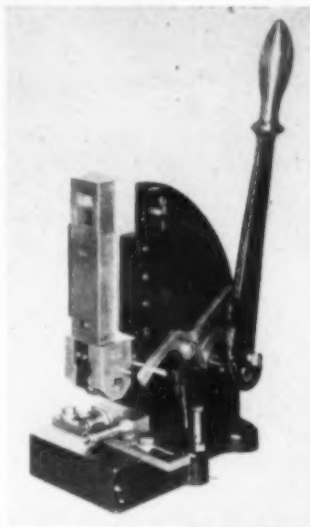
The nearest G-E office can tell you what data to supply as a basis for a quotation, or write to General Electric, Section 16-250, Pittsfield, Mass.

**Reg. U.S. Pat. Off.*

GENERAL ELECTRIC
405-13-5600

▲ Mention Item NED-3446 when writing ▲

SERIAL NUMBERING UNIT

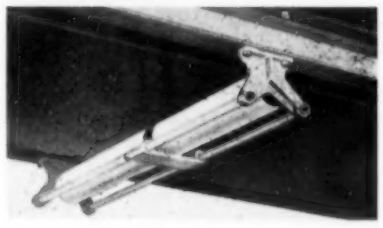


Designed for serially numbering two or more mating parts for ease in matching in reassembly, this Powerful hand bench press is fitted with automatic numbering head with special trip cam for consecutive, duplicate or whatever type of numbering is required. Unit shown is assembled with automatic head for numbering two mating parts of spark plugs for aircraft engines.

Modified toggle lever movement enables operator to exert sufficient pressure for marking hard parts, yet at same time to control that pressure so well that extremely delicate watch and instrument parts can be numbered or marked without harm. Made by **Wm. A. Force & Co.**, 210 Nichols Ave., Brooklyn, N. Y.

▲ Mention Item NED-3447 when writing ▲

CONVEYOR ALIGNING ROLLER

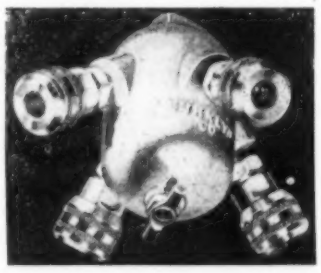


One or more of these double-action automatic self-aligning rollers spaced among standard return rollers, will keep return run of conveyor belt centered without need for side guide rollers. They can be used in place of standard return rollers to eliminate wearing of sides of belt.

Roller turns on SealMaster ball bearings and is pivoted on inclined axis. When belt runs to one side, greater weight or drag on that side causes that end of roller to tilt downward and forward. This causes belt to return to center, after which guide roller pivots to neutral position. Made by **Stephens-Adamson Mfg. Co.**, 12 Ridgeway Ave., Aurora, Ill.

▲ Mention Item NED-3448 when writing ▲

FOUR-WAY AIR MANIFOLD

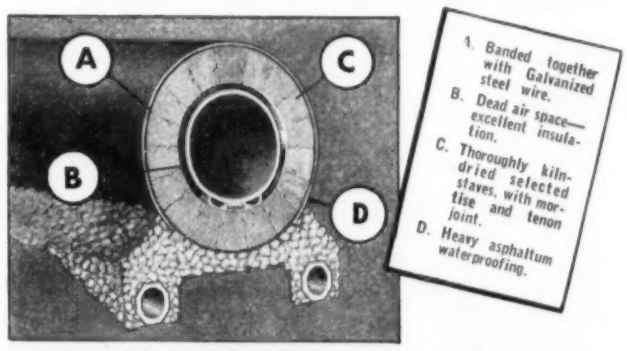


Having wide application in aircraft plants, foundries, machine shops, sand blasting, spray painting and other industrial operations where extra air hose connections are needed from one main pipe or hose outlet, this manifold will accommodate up to four air hoses. It is of ceiling suspension type. Air trap and drain reduce moisture in compressed air.

Manifold may be used with quick detachable hose fittings, as illustrated, or with straight screw-in connections. Intake is ½-inch pipe thread and four outlets are each ¼-inch pipe thread. Made by **Burklyn Co.**, Dept. NED, 3429 Glendale Blvd., Los Angeles, Calif.

▲ Mention Item NED-3449 when writing ▲

An Inexpensive CONDUIT AND INSULATION IN ONE UNIT



***for* LOW PRESSURE Steam and Hot Water Lines**

Easy to install — 91% efficient by test. ADSCO Red Diamond Brand Casing is America's No. 1 Conduit of non-critical material for low pressure underground steam and hot water lines. Many installations found to be in perfect condition after over 25 years continuous service.

Cut shows correct method of installation—crushed stone or coarse screened gravel bed and porous drain tile laid to grade with outlet to sewer at all low points.

Write for bulletin 35-65D.

AMERICAN DISTRICT STEAM COMPANY
N. TONAWANDA, N. Y.
MAKING "UP-TO-DATE" STEAM LINE EQUIPMENT FOR OVER 60 YEARS.

ADSCO RED DIAMOND BRAND WOOD CASING

▲ Mention Item NED-3450 when writing ▲

SPEEDS PRODUCTION! CUTS TIME AND COSTS!

SPEEDY AIR VISE

FAST! POWERFUL! FOOT CONTROLLED!

$24
Complete with Foot Control Valve, Air Hose and Fittings

HAND FREE OPERATION!
• Foot operation leaves BOTH hands free for fast insertion and removal of work. Vise stays open or closed without constant foot pressure.

PROMPT DELIVERY!

• At last! A powerful pneumatic vise at a remarkably low price! Expertly engineered, SPEEDY AIR VISE is fast in action, hard gripping, husky, easy to operate . . . just the vise you need to speed up your production. Operates from air line or individual compressor, exerting a grip of 15 times air pressure. Jaw opens up to 3 inches, easily fitted to hold castings, parts, jigs etc. Because of its low cost, can be economically used on every drill press, miller, filer and assembler.

Ask Your Dealer, or Write For Circular D-7

W. R. BROWN CORP., 5720 ARMITAGE AVE., CHICAGO, ILL.

▲ Mention Item NED-3451 when writing ▲

1500 SQUARE FEET
1 TON OF WYO-LITE *PLASTIC INSULATION* COVERS 1500 Sq. Ft.

1000 SQUARE FEET
1 TON OF OTHER TYPES COVERS ONLY 1000 Sq. Ft.

We Save You Money!

Many large users of plastic insulation have standardized on WYO-LITE Plastic Insulation for two primary reasons: (1) WYO-LITE is very efficient—has the highest insulation values including unusual adhesive qualities. (2) WYO-LITE cost considerably less per square foot. The cost per ton may be the same but it covers 50% more than other types; 1,333 lbs. of WYO-LITE covers as much surface as 2,000 lbs. of other types. Buy insulation by efficiency and coverage — not merely by the cost per pound.

Write for details and prices

WYO-LITE INSULATING PRODUCTS
4612 East 71st St. Cleveland, Ohio

1 TON of WYO-LITE Covers 1500 SQ. FT.

▲ Mention Item NED-3452 when writing ▲

A SERVICE EXTENDED TO READERS of this PUBLICATION

Our advertisements in other publications are printed on "inserts", a method which we cannot use in this publication. These inserts contain useful information on the properties, uses, manufacture, and methods of machining Synthane Bakelite-laminated. If you would like to have any or all of the sheets in this informative series you are cordially invited to request them on the coupon below.

SYNTHANE
Bakelite—laminated
TECHNICAL PLASTICS
SHEETS • RODS
TUBES • FABRICATED
PARTS • SILENT
STABILIZED GEAR
MATERIAL

SYNTHANE CORPORATION,
Northeast River Road, Oaks, Penna.
Kindly send me:
( )"How Synthane Sheets, Rods and Tubes are Made"
( )"General Characteristics of Synthane Grades"
( )"Practical Methods of Machining Synthane"
( )"Standards of Quality for Synthane Sheets"
( )"Corrosion Resisting Synthane"
*Name*_____
*Title*_____
*Company Name*_____
*Street Address*_____
*City*_____ *State*_____

▲ Mention Item NED-3453 when writing ▲

DON'T TAKE IT FOR GRANTED

that you can't get

FABRICATED STEEL PLATE EQUIPMENT

It doesn't pay to assume that everybody is too busy to build a vital piece of equipment for you. We're busy, of course. Who isn't?

But—production schedules are hard things to control these days—especially in a business like ours where the types of work we do are so varied. Despite the most careful planning, there are times when some departments get ahead of schedule while others are hard pressed to meet demands. And a week later the situation may be reversed.

Because of this condition, we are sometimes able to accept new orders for early production. Thus, we may be able to immediately handle your requirement. Of course, much would depend upon the CMP allotment this requirement would carry.

Don't take it for granted that you can't get what you need. First, mail us your specifications and prints. We will quote at once and advise you of the earliest possible production and delivery dates. You may be agreeably surprised.

GRAVER

GRAVER TANK & MFG. CO., INC.

NEW YORK CATASAUQUA, PA. 4811-33 Tod Ave EAST CHICAGO, IND. CABLE ADDRESS — GRATANK CHICAGO TULSA

43-12-8

▲ Mention Item NED-3454 when writing ▲

INSTALL HALLOWELL SHOP EQUIPMENT

1367 "Hallowell" ready-made interchangeable bench combinations give you just what you want. Each bench sturdily constructed; stands firm without costly bolting to floor. Tops of laminated wood, Masonite or, if advantageous, of steel. 5 heights; 7 lengths, various widths. Get "Hallowell" Shop Equipment Catalog.

Fig. 928. Pat'd. and Pats. Pending. Drawer is extra.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. BOX 581

— BRANCHES —

BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

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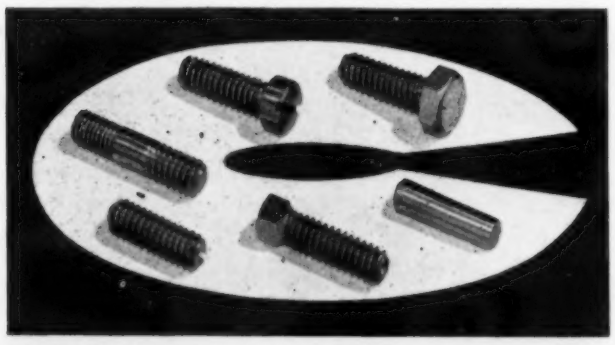


CHICAGO SCREW QUALITY

Serving With Our Armed Forces!

They served in 1898. They served in 1917—and they were among the first to be enlisted in the present global war.

Steel and Brass Hexagon Head Cap Screws, Case Hardened Square Head and Headless Set Screws, Steel Taper Pins and Studs are just a part of the Chicago Screw "QUALITY" line of Stock Products helping our men win the War!

and - -

They're Hard! They're Tough! They're Strong! They're Accurate!

★

ARMY E NAVY Order from your distributor

★

THE CHICAGO SCREW CO.

ESTABLISHED 1872

1026 SO. HOMAN AVENUE CHICAGO, ILL.

▲ Mention Item NED-3456 when writing ▲

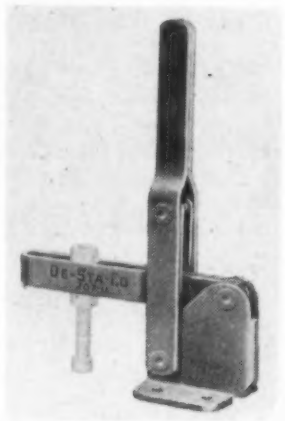
WOOD CUTTING BAND SAW

For all purpose contour and cut-off operations, this band saw may be used on wood or plastic stock up to 8⅝ inch thick. Available in bench and floor models, machine has deep throat which permits cutting to diameters of 27 inches. High speed and minimum of vibration are permitted because of special wheel construction. Blade tension is easily determined on accurate scale.

Wheel guards must be closed before machine will operate. Telescope guard on blade holds by friction when lock handle is released so that it cannot drop. Blade guides will handle blades ranging from ⅛ to ¾ inch wide. Table will tilt 45 degrees to right and 10 degrees to left. Made by **Boice-Crane Co.**, 951 Central Ave., Toledo, O.

▲ Mention Item NED-3457 when writing ▲

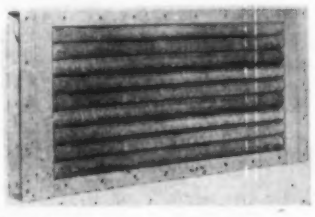
SMALL TOGGLE CLAMP



Suitable for use in aircraft construction or on other work where clamping space is limited, De-Sta-Co light duty toggle clamp measures only 5½ inches in height overall. It has base of 1⅜ x 1¾ inches. Length of bar from handle to tip is 2¼ inches. Clamp is available in two styles; model 207S with solid straight bar and illustrated model 207U with "U" shape bar. Clamping action is obtained by operating handle lever. Made by **Detroit Stamping Co.**, 360 Midland Ave., Detroit, Mich.

▲ Mention Item NED-3458 when writing ▲

FINNED BLAST COILS



Adaptable for air heating in heating, ventilating, air conditioning or process work, Industrial blast coils have finned tubes. Steel construction is used throughout, with welded header ½-inch thick on tube side. Individual tubes consist of continuous steel ribbon wound spirally on tube so as to form perfect contact between fin and tube. Tube assembly is metallic bonded in solder bath.

Two styles of casings are available and proper draining is assured when installed in any position. Made for steam pressures up to 150 pounds per square inch, coils are available in seven casing widths ranging from 18 to 37 inches and lengths from 24 to 102 inches in 6-inch multiples. Coils may be one, two or three rows deep. Made by **Industrial Mfg. & Engineering Co.**, 3847 N. Ravenswood Ave., Chicago, Ill.

▲ Mention Item NED-3459 when writing ▲

CONNECTING RODS are L-O-N-G-E-R in WISCONSIN HEAVY-DUTY AIR-COOLED ENGINES

The length of rods in Wisconsin Engines is 2½ times the length of the stroke. This extra length is an important factor in reducing vibration to a negligible minimum because *long rods reduce angularity* and this, in turn, reduces piston pressures against the cylinder walls. The shorter the rod, the greater the vibration and wear — so we don't use short rods in Wisconsin heavy-duty air-cooled engines. Another detail that contributes to Wisconsin dependability.

MOST POWER Per POUND

WISCONSIN MOTOR Corporation

MILWAUKEE, WISCONSIN, U. S. A.

World's Largest Builders of Heavy-Duty Air-Cooled Engines

▲ Mention Item NED-3460 when writing ▲

TASGON A LIGHTNING FAST PENETRATING OIL AND RUST SOLVENT

Nothing can dissolve rust or penetrate into tight spots as fast as Tasgon. If you want to loosen rusty joints, nuts, bolts, couplings, unions, bushings or connections just use a few drops of Tasgon. By the unique principle of colloidal penetration Tasgon dissolves and loosens rapidly—saves you time and labor. Tasgon is also ideal for removing gummed up dirt and paint from tools and metal surfaces.

Try it! Sold at leading mill supply houses. Or send 10c for sample can. Samuel Cabot, Inc., 1418 Oliver Bldg., Boston, Mass.

▲ Mention Item NED-3461 when writing ▲

STA-WARM RUST-PROOFS THEM EFFECTIVELY AND ECONOMICALLY

★ Sta-Warm equipment gives improved, uniform results, facilitates operations, and lowers costs. Parts are immersed in the no-rust compound in a Sta-Warm Electric Heater and brought to the required temperature. Variable thermostatic control compensates for loss of heat when parts are immersed. When removed, all excess compound drains off leaving parts completely covered with an even coat of protective film that adheres tenaciously and presents nice appearance. Processes can be standardized for quantity production with minimum of skill on part of operator. Let Sta-Warm engineers help work out your problem.

STA-WARM ELECTRIC CO.

130 N. CHESTNUT ST. • RAVENNA, OHIO

▲ Mention Item NED-3462 when writing ▲

What's NEW in PISTON RINGS?

Call in RAMCO for Data and Engineering Recommendations

Do you operate engines? Or build machines requiring piston rings? Whether or not you are conscious of the need for improved piston ring performance, get in touch with us! Many are the recent developments in design and precision of piston rings! We will gladly show you how you may utilize them to conserve oil and reduce the cost and frequency of engine repair! If you operate motor vehicles or stationary gasoline engines **WRITE FOR FREE ENGINE OVERHAUL MANUAL** containing latest, most approved installation practices, etc. Address all inquiries to **RAMSEY ACCESSORIES MFG. CORP., 3720 Forest Park Blvd., St. Louis, Mo.**

Manufacturers of Automotive, Industrial and Aircraft Piston Rings

RAMCO

Especially Engineered

PISTON RINGS

FOR YOUR SPECIFIC REQUIREMENTS

FOR REPLACEMENT . . . FOR ORIGINAL EQUIPMENT

▲ Mention Item NED-3463 when writing ▲

When the job calls for COLOR

Templar Thin Lead COLORED Indelible PENCILS

A wide range of vibrant colors — for a wide range of work. TEMPLAR Colored Indelible enables artists, engineers, architects, draftsmen, and office workers to do a smooth, efficient day-long job without annoying breakage or stoppage. These extra-value features will speed up your work:

- *Brilliant, satin-smooth colors that will not run, smear, or fade.*
- *Extra strong leads for long hours of pencil work.*
- *Long-lasting thin lead points for fine line work.*
- *Permanent, soluble colors for water coloring, painting, blueprinting.*
- *Finest cedar wood casings, colored to match leads for quick identification.*

Write for FREE SAMPLE giving name of stationery dealer.
RELIANCE PENCIL CORP., Mt. Vernon, N.Y. Dept. B-4

▲ Mention Item NED-3464 when writing ▲

METEX COOLANT STRAINER

The Inexpensive Efficient Coolant Strainer

(U. S. Pat. 1676191—Other Pats. Pending)

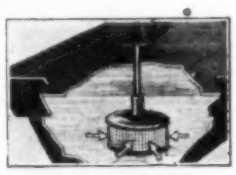
Adaptable to Most Machine Tools

All easily installed, vertically or horizontally, singly or in multiple.

Cylindrical Type

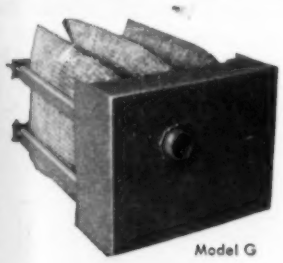
MODEL C, Cylindrical Type (size adapted to most machines). Diameter 5" . . . Overall Height—4 5/32" including coupling. Capacity up to 10 G.P.M.—¾" pipe.

Other sizes, surface areas and capacities, this type, Model A, B and D.



Typical Installation

Metex Coolant Strainers in machines equipped with gear pump coolant systems (or centrifugal pumps that have an intake pipe extending into the tank) will strain chips and slag remaining in suspension, save pumps, gears, unnecessary machine wear, and will boost and maintain production.



Model G

Model G and H—
Oblong Type

Are constructed to remove fine residue (grindings, etc.) from the coolant fluid. Same installation as Cylindrical Type. While designed particularly for grinders and automatic screw machines, will give efficient service in all machines. Model H is especially adapted to those with shallow or narrow sumps.

Buy Them By The Dozen

Model H

Your machines are working on a 'round-the-clock production program. The coolant, being continually agitated, does not have a chance to settle, so you need the protection of these strainers NOW. Buy them by the dozen so as to have a supply in your stockroom to be installed when pumps are being repaired or replaced, or when machines are down for a short time.

Distributed by leading Mill Supply Wholesalers or direct from

METAL TEXTILE CORPORATION
6 Central Avenue, Orange, N. J.

▲ Mention Item NED-3465 when writing ▲

PLASTIC JOINING MACHINE

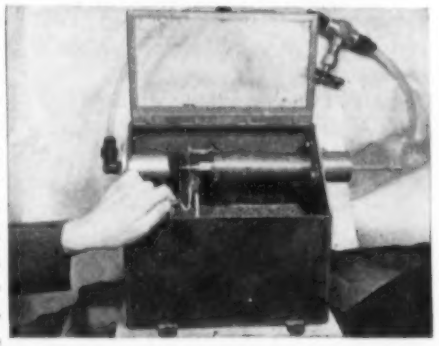
Using radio-frequency current in place of needle and thread, this electronic sewing machine will join thermoplastic and thermoplastic coated materials with solid "seam" that is air and water tight. Bond produced is stronger than material itself. Process is expected to find widespread application in fabrication and processing of these materials which are being used for raincoats, weather balloons, watertight packages and similar products.

Process differs from usual externally applied heat methods in that radio frequency maintains uniform heat throughout seam. Two small rollers connected to generator serve as needles. Concentrated radio frequency beam generates heat by dielectric loss and causes thermoplastics to fuse or weld into tight bond.

Current is derived from low-power oscillator. Small electric motor with foot pedal control drives rollers. Power for both motor and oscillator is 110-volt alternating current. Developed by Electronic Apparatus Div., F. W., RCA Victor, Camden, N. J.

▲ Mention Item NED-3466 when writing ▲

SMALL BEARING CLEANER



Bearings used in precision flight instruments and controls must be absolutely clean so as to assure unfailing operation of equipment. This machine is designed to clean and oil bearings as received from manufacturer prior to assembly in instruments. Bearings are not exposed to room air and are not handled by operator after cleaning.

Machine will clean bearings with races ranging from ¼ to 1¼ inches in outside diameter. Unit consists of solvent container, fractional horsepower pump, solvent filter and bearing adapters. Air hose may be used, if required, to clean excess solvent from cleaned bearings. Unit furnishing filtered air can be built into machine.

Filtered solvent is forced over and through bearings. After cleaning, they fall into small chute and are discharged into container or cellophane bag without being touched by operator's hand. All parts of machine are Parkerized to provide rust protection. Non-breakable plastic door permits operator to view all operations. Made by **American Foundry Equipment Co.,** 508 S. Byrkit St., Mishawaka, Ind.

▲ Mention Item NED-3467 when writing ▲

HOW TO BE SURE IT'S Shipped Right and Strapped Right!

● Your shipment can pass the final test—safe arrival—if it's shipped right and strapped right. Acme Steelstrap guards against transportation hazards . . . assures maximum protection. Complying with all Federal Strapping Specifications, Acme Steelstrap is supplied in all types and sizes.

Then, too, Acme Steelstrap speeds handling, cuts costs . . . and conserves vital shipping space . . . is used on all kinds of war products packed in boxes, crates, bundles or skids. For bracing carload ladings Acme Unit-Load Bands are employed. Acme packing and shipping engineers will be glad to help you with your strapping problem. For full information . . . write, phone or wire the nearest Acme office.

ACME STEEL COMPANY
2822 ARCHER AVENUE, CHICAGO, ILLINOIS
Branches and Sales Offices in Principal Cities
Look for Acme Steel on the Seal

▲ Mention Item NED-3468 when writing ▲

Save . . . LABOR with WEDGE Split CHILL RINGS

The NEW and most efficient way to weld pipe is with WEDGE Chill Rings with the patented SPLIT Feature. You get STRONGER joints—they speed welding, and less skilled help can do a good job. Write.

WEDGE Thread PROTECTORS will save PARTS

Split Feature Patented

Thousands of WEDGE Protectors are bought each month to protect threads on valuable parts. There are many parts in which damaged threads cause serious loss—WEDGE Protectors will protect them in storage, handling, and shipping. Write.

WEDGE PROTECTORS, INC.
9528 RICHMOND AVE. CLEVELAND, OHIO

Use WEDGE Chill Rings-Thread Protectors

▲ Mention Item NED-3469 when writing ▲

THESE COMPACT, EC Ball Bearing Pillow Blocks will improve the efficiency of all kinds of machines. They are inexpensive, reliable, foolproof and easy to install.

These Important features are:

- Full internal Self-Aligning Ball Bearings—with maximum number of balls and Automatic Alignment.
- Attractive, well designed housing—easily opened for bearing inspection. Large Lubricant capacity.
- Labyrinth Type Seals—Frictionless, long wearing and exceptionally effective; keep lubricant in and dirt out.
- Expansion or non-expansion type, optional at no extra cost.
- Closed end-cap optional and interchangeable on standard units.
- This EC Series is available in shaft sizes from ¼" to 2⅝".

AHLBERG BEARING COMPANY
CJB AHLBERG
Manufacturers of CJB Master Ball Bearings
3042 WEST 47th STREET • CHICAGO, ILL.

▲ Mention Item NED-3470 when writing ▲

Something "NEW" has been added — to our line of Literature!

"The Little Handbook",

The LITTLE HANDBOOK is a buyer's guide: It explains in detail how to specify our products, how to write an order or inquiry which will receive immediate attention. It will save you time and dollars in unnecessary wires and phone calls. The LITTLE HANDBOOK gives you the information you need TODAY. It is legible, non-technical, and practical. It "tells all" about our tank heads, standard steel shapes, and stampings. It should be in the hands of everybody in your organization who buys our products.

THE COMMERCIAL SHEARING AND STAMPING COMPANY.
YOUNGSTOWN · OHIO · U.S.A.

▲ Mention Item NED-3471 when writing ▲

DIE CASTINGS

ZINC or ALUMINUM

We now have additional capacity in our new, modern plant available for greater production of zinc and aluminum die castings. Highest quality. Good deliveries — on schedule. Send prints or samples for quotation.

CONGRESS DIE CASTING DIV.
CONGRESS TOOL & DIE CO.
3752 East Outer Drive - Detroit, Mich.

▲ Mention Item NED-3474 when writing ▲

They Speak a Language the Japs Understand

FIRE ONE! FIRE TWO!

From the first day of this war, the crews of U. S. submarines have thus "reasoned" with the enemy—and in his own waters.

They know *action* and *engines*—for they literally live with and by the Diesels which take them there and bring them back.

Many of these Diesels are Fairbanks-Morse Diesels. We feel that nothing short of our level best is good enough for these men of the silent service.

Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, Ill.

★ ★ ★

Countless engines from the F-M Complete Line of Stationary and Marine Diesels are also helping to win on other fighting and industrial fronts.

FAIRBANKS-MORSE

DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · SCALES · WATER SYSTEMS · FARM EQUIPMENT · STOKERS · AIR CONDITIONERS · RAILROAD EQUIPMENT

Diesels

▲ Mention Item NED-3475 when writing ▲

ALLOY IDENTIFICATION UNIT

Any ferrous alloy can be instantly identified by use of reference specimens with this Identometer. Known sample is attached to one of two clamps on electrical instrument and unknown specimen to other. When two pieces of metal are brought into contact, lighted indicator registers on easily read scale whether or not parts are of same chemical analysis. It is possible to classify unknown pieces or lots of steel according to heats, grades, types, heat treatments and composite types.

Instrument can be used to identify metals in any stage of their working from ingot onward, if cooled to room temperature. Mounted on casters, machine may be used convenient to work or stock piles. Machine can be furnished to operate on any standard alternating or direct current. Made by American Tubular Elevator Co. Distributed by **Dravo Corp.**, 300 Penn Ave., Dravo Bldg., Pittsburgh, Pa.

▲ Mention Item NED-3476 when writing ▲

WIREBOUND CRATES

Reducing tare weight of air compressor by 29 pounds, crate in lower illustration is made of selected wood, wirestitched and bound. Top illustration shows formerly used wooden crate. Strength is comparable to steel, protecting compressor from jolts and jars encountered in transit. Use of these crates saves time in packaging, it is claimed. They are furnished flat, two-thirds assembled. Inexperienced man can assemble wirebound box, quickly and easily. Unpacking operation is similarly simple. After few nails are drawn, mat portion of crate is quickly detached from base section. Made by **General Box Co.**, Corner of Dearborn & Illinois Sts., Chicago, Ill.

▲ Mention Item NED-3477 when writing ▲

BEARING & TERMINAL PULLER

Designed for removing bearings from shafts or housings and for pulling terminals from storage battery posts, No. 13 and No. 13A Steelgrip pullers are made in two sizes with reaches of 2 and 5 inches respectively. Arms are of drop forged, heat treated steel which will withstand all service conditions. Hooks are thin enough so that they will fit between bearings and motor housings, and long enough to reach bearing races. Made by **Armstrong-Bray & Co.**, 5388 Northwest Highway, Chicago, Ill.

▲ Mention Item NED-3478 when writing ▲

UNTIL THE LIGHT SHINES AGAIN

We must keep on making Thermometers for Uncle Sam and for Victory.

These thermometers must be made to the same high standards for which Palmer Thermometers are famous because only GOOD Thermometers will help to win the war more speedily.

In the meanwhile, REMEMBER Palmer Quality means:

1—Easy-Reading "Red-Reading-Mercury"
2—Guaranteed permanent accuracy
3—Constructed for long life.

(Catalog sent on request)

THE PALMER CO.
Mfgr. Industrial, Laboratory, Recording & Dial Thermometers
2523 NORWOOD AVE., CINCINNATI, NORWOOD, O.
Canadian Plant: King & George Sts., Toronto

▲ Mention Item NED-3479 when writing ▲

MEAD

BURRING MACHINE

INDUSTRY'S JACK-OF-ALL-TRADES

Also Works On Inside Cut-Out Openings!

Serving a swiftly-growing number of America's important Defense Contractors. For that troublesome grinding or finishing job, try The Burring Machine. If it doesn't help you, it won't cost you a cent! There is not one industrial plant in America where this machine—somewhere along the line—cannot be helpful. Tool-room, template department, production line, or elsewhere—it will find its place. Try it at our expense. Immediate delivery in most instances.

TYPICAL BURRING MACHINE JOBS

De-burring stampings and other small parts. Removing "flash" from forgings and die-castings. Grinding cutters and tools. Cleaning up irregular edges. Smoothing and polishing metals of all kinds.

MEAD SPECIALTIES CO.
15 S. MARKET ST. Dept. 73-N CHICAGO

▲ Mention Item NED-3480 when writing ▲

Did You Get *YOUR* Copy of This New *FREE* Catalog

This catalog contains complete Descriptions, Specifications, Engineering Data, Performance Tables, Accessory and Price Lists covering 12 sizes Gast Rotary Air Pumps, ½ to 23 C.F.M.; Vacuum to 28". Pressures up to 30 lbs., and full data on Gast Air Pumps.

on GAST Air Pumps and Air Motors . . .

★ You need this catalog if you use Vacuum Pumps or Compressors — or Air Motors for explosion-proof locations. It presents actual photographs and descriptions of interesting applications of Gast Air Pumps and Air Motors, many of them applicable to speeding up war production. It explains the exclusive Gast Rotary principle which makes possible the smooth, quiet, non-pulsating operation—the compactness—the automatic take-up for wear—the economy in first cost and maintenance—and the many other advantages for which Gast "engineered-to-the-job" Air Pumps and Air Motors are famous.

Send for this FREE catalog; also if you have any Special pump problems, write us full details and get our recommendations.

GAST MFG. CORP.
115 Hinkley St.
Benton Harbor, Mich.

V-BELT DRIVEN GAST ROTARY AIR PUMP

GAST ROTARY AIR MOTORS & PUMPS

▲ Mention Item NED-3481 when writing ▲

DON'T WAIT FOR TURRET LATHES

Convert any engine lathe into a turret lathe in 15 seconds with JEFFERSON TURRET ATTACHMENTS. To fit bench lathes and lathes up to 24" swing

● This new modern TOOL-POST TURRET (below, right), made in 2 sizes, designed to increase production on engine lathes. Easily mounted on cross slide or compound rest. Has capacity of 4 standard tool holders which are easily inserted and rigidly held.

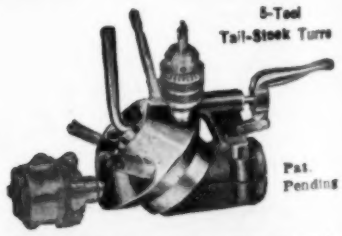
6 Days Delivery

● Then there's the completely modernized 5-tool TAIL-STOCK TURRET (below, right), made in 4 sizes to fit small bench lathes and lathes up to 24" swing. Also the adjustable PULL-FEED LEVER. Jefferson Turrets are real production tools — substantial, rigid, accurate. They must not be confused with the small makeshift gadgets now on the market.

Pat. Pending

4-Tool Tool-Post Turret

The Jefferson Bull-Dog Precision Milling Machine. Obtainable Power or Hand Feed.



5-Tool Tail-Stock Turret

Pat. Pending

● ALSO—Milling Machine Dividing Heads, Vises, Belt Sanders, Swing Frame Grinders, Gyratory Foundry Riddles.

JEFFERSON MACHINE TOOL CO.
669-679 W 4th STREET DEPT. J CINCINNATI, OHIO

▲ Mention Item NED-3482 when writing ▲

Dust, Soot, Smoke

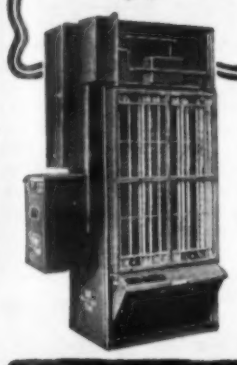
EVEN Oil Vapors and Welding Fumes

PRACTICALLY VANISH WHEN THE AMERICAN

ELECTRO-MATIC

SELF CLEANING ELECTRIC PRECIPITATOR

is on the job



Electrical precipitation—long recognized as the most efficient method of collecting smoke, soot, and fine dust particles—is combined in the AAF Electro-Matic with the automatic self-cleaning viscous impingement filter to provide the most efficient air cleaning ever offered. Send for Bulletin No. 250D. Address 391 Central Avenue

AAF

AMERICAN AIR FILTER CO. INC.
INCORPORATED
LOUISVILLE, KENTUCKY

▲ Mention Item NED-3483 when writing ▲

You're losing time and money without a

Cathode-Ray OSCILLOGRAPH

Used to check wave form and harmonic content. Also to check phase.

Useful in checking power factor, welding cycle, relay and circuit-breaker operation, etc.

Used to check vibration, dynamic balance of rotating parts, ignition, and engine pressures.

Choice of oscillograph types to meet all purses and purposes.

★ That's a positive fact. Let us prove it in your case. In the plant, out in the field, in the lab, in servicing—a DuMont cathode-ray oscillograph is a "must" today. Write for latest catalog. Also free subscription to "DuMont Oscillographer".

DUMONT

ALLEN B. DU MONT LABORATORIES, INC.
Passaic, New Jersey

Cable Address: Wespaxlin, New York

▲ Mention Item NED-3484 when writing ▲

The GROVE Pneumatic Gauge COMPARATOR

GROVE SIMPLICITY ACCURACY SAFETY

The Portable Method of Checking All Types Of Pressure Gauges

- Compact, portable and fully self-contained.
- Built-in high capacity rechargeable air cylinders.
- Precision laboratory test gauges accurate to within ¼ of 1% full scale.
- Completely equipped with tubing, connections and accessories.

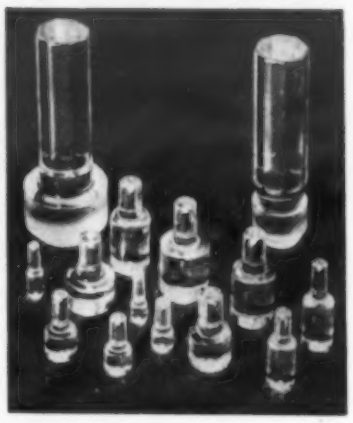
Figure the amount of time, trouble and money you save when you check your pressure gauges "in-place" without removing them from their panels or mountings; without disturbing existing line connections. The portable Grove Pneumatic Gauge Comparator gives you this fast accurate means of accurately checking any service gauge in service. Write today for Bulletin 300.

GROVE REGULATOR COMPANY
6533 Green Street, Emeryville, California
Branch Offices:
5444 Navigation Blvd., Houston, Texas—30 Rockefeller Plaza, New York City.

GROVE Pneumatic Gauge COMPARATOR

▲ Mention Item NED-3485 when writing ▲

GLASS GAGES



Affording visibility in inspection, glass plug gages are ground to same tolerances as steel gages. They are not subject to corrosion. Thus need for greasing during shipment and storage is eliminated. Scratches and slight chipping on glass neither burr gages nor change their gaging functions. Unlike steel gage which may spring or deform if dropped, glass gage either breaks or remains dimensionally unchanged.

Gages range in size from ⅜ to 2½ inches in diameter. Additional sizes will be available when molds are completed. Made by **Turner Gauge Grinding Co.**, Hilton, Drayton & Cortez, Ferndale, Mich.

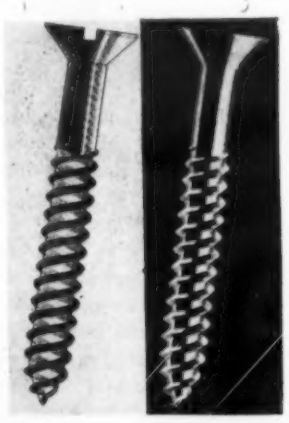
▲ Mention Item NED-3486 when writing ▲

AIR DRYING DEVICE

First developed for use with coaxial cables in radio transmitting stations, this air drying device is equally applicable to many other uses. It consists of hand operated air pump combined with chemical drying tube. Drying agent is in a transparent container mounted concentric with pump barrel. Agent contains color index which is blue when chemical is active, and turns pink when it becomes saturated. Drying chemical may be replaced when saturated or it may be removed from tube and reactivated by heating in open pan. Unit is priced at $26.50. Made by **Victor J. Andrew Co.**, 363 E. Seventy-fifth St., Chicago, Ill.

▲ Mention Item NED-3487 when writing ▲

DOUBLE THREAD SCREW



Developed especially for wood, plastic and combination assemblies, this Twin-Fast screw is designed for faster, tighter fastenings. Two parallel threads at opposite sides of shank terminate in single point. Construction affords greater thread pitch than conventional screw and driving speed is doubled.

Screws are self-tapping, which is advantageous for plastic assemblies. Increased thread area assures tight seating and holding power. Made by **The Blake & Johnson Co.**, Waterville, Conn.

▲ Mention Item NED-3488 when writing ▲

A SWEEPER TO BLITZ YOUR SWEEPING JOBS

Here is one piece of equipment, the equal of a whole crew of sweepers—to blitz your cleaning problems . . . Consistent with modern shop practice, men with brooms are rapidly being replaced with this mechanized method. One MOTO-SWEEPER can do the work that formerly required many men—releasing them to help speed the wheels of production . . . relieving still further the burden of non-productive labor . . . Efficient, rugged and easy to operate, in large or small areas—it turns right or left under its own power by means of a separate clutch on each wheel of the tractor, controlled at the handlebar (patented) . . . Send for catalog and complete information . . . 3 models (two motorized) . . . prompt deliveries on high priorities.

THE MOTO-MOWER COMPANY
Industrial Sweeper Division
4590 WOODWARD AVENUE • DETROIT, MICH.

MOTO-SWEEPER
A SWEEPING CREW ON WHEELS!

▲ Mention Item NED-3489 when writing ▲

Use "PERMAFLEX" Resurface and Patch INDUSTRIAL FLOORS

The Only Hard Mastic

• Wearproof • Dustproof • Waterproof • Fire-resistant • Restful • Quiet • Slipproof • Sanitary

Install any thickness required right over the old surface. Bonds perfectly—never comes loose. 3000 lbs. pressure per sq. in., will not rut. Outwears any other known flooring.

Install "Permaflex" right over your old or new floors, walks or drives . . . interior or exterior . . . on Friday night and Saturday. Ready for use Monday. No chipping. No dust. No production delays. No need to move machinery . . . finish right up to it. If desired, our Contract Department will install "Permaflex" floors for you, up to 30,000 square feet per day.

More than 200 leading industrial plants use "Permaflex" . . . including U. S. Steel, Bethlehem, Republic, General Motors, A. O. Smith, Union Carbide, Remington Arms, Anaconda, Western Electric, Westinghouse, Bush Terminal, leading Railroads . . . and never a failure in more than 1000 installations.

Industrial Plants—write for details; 100 sq. ft. trial offer . . . and prove that Permaflex makes the most durable, lowest cost, most economical industrial flooring ever invented.

INSTALL COMPLETE 12½c per square foot

PERMAFLEX PRODUCTS COMPANY
1848 North Front Street, Philadelphia, Pa.

▲ Mention Item NED-3490 when writing ▲

Don't BURN Paper CONVERT IT!

AIRFLUFF PAPER SHREDDER MAKES EXCELSIOR OUT OF CONFIDENTIAL PAPERS, BLUEPRINTS OR ANY WASTE PAPER

Here's the machine that destroys paper yet saves it! The AIRFLUFF Paper Excelsior Shredder, easily shreds, separates and fluffs old newspapers, confidential papers, blueprints, magazines, waste paper, corrugated cartons, tissue, Cellophane and waxed paper. Low price, simple to install. Power and maintenance cost less than 2c per 100-pound bale. Absolutely safe—present employees can easily operate. Cuts in widths from ⅛" to ⅜". Model No. 14 shreds 600 to 1800 lbs. per hour. Model No. 10 shreds 200 to 800 lbs. per hour. Write today for prices and complete facts about these remarkably simple, sturdy and efficient new AIR-FLUFF Paper Shredders.

WRITE TODAY

MITTS & MERRILL • SAGINAW, MICH.
1000 SOUTH WATER STREET
BUILDERS OF MACHINERY SINCE 1854

▲ Mention Item NED-3491 when writing ▲

SEND FOR THE STORY OF *Uni-Shell* MOTORS... THE LATEST DEVELOPMENT BY R & M!

Only complete line of motors in which *all* types in any one frame size are *interchangeable* and similar in appearance.

MAIL THIS COUPON

ROBBINS & MYERS, INC.
Motor Division, Springfield, Ohio

Send me the free book about Uni-Shell Integral Horsepower Motors.

Name..... *Position*.....
Firm.....
Street.....
City & State.....

▲ Mention Item NED-3492 when writing ▲

Welding has become a quantity production operation with C-F POSITIONERS because the welders themselves can now position giant weldments without a crane or sling crew. On the giant turbine gear blank shown the welder welds all sides and internal angles downhand—just pushes buttons to tilt the blank up to 135° beyond horizontal or rotate it 360°, under variable speed control to make the endless peripheral welds. So it is thruout many shipyards, welders with C-F POSITIONERS are building parts and sub-assemblies which would require many more hours of labor, highly skilled men and machine tools to produce by other methods.

Write for Bulletin WP 22.

C-F POSITIONER

CULLEN-FRIESTEDT CO.,
1304 S. KILBOURN AVE. CHICAGO, ILLINOIS

▲ Mention Item NED-3493 when writing ▲

SHAPE CUTTING MACHINE

Accuracy in cutting, compactness of size, ease of control and economy of operation are claimed features of this National type JR cutting machine which will perform cutting operations up to overall size of 3 by 4 feet. It may be used for cutting unlimited variety of shapes at speeds from 2 to 35 inches per minute.

Template tracer has tension and driving rolls which grip template and follow its exact contour so that shape is automatically cut out of plate by torch. Fingertip control of manual tracer attachment permits accurate tracing of master drawing. Smooth uniform driving, perfect balance and free movement result in accurate shape cutting. Drive wheel automatically holds any desired straight line without guidance. Circle cutting attachment is adjustable for producing any circle from 3 to 36 inches in diameter.

Handwheel provides micrometer adjustment of torch to starting position. Torch may be set at any required angle to cut bevels. Rolling surfaces of tracks are precision finished and ball bearing rollers assure uniform movement in all directions. Made by **National Cylinder Gas Co.**, 211 W. Wacker Drive., Chicago, Ill.

▲ Mention Item NED-3496 when writing ▲

● Bunting Bronze Standardized Bearings are just as readily available to soldiers on the production front as are bullets to soldiers on the fighting front. And often just as necessary. Write for catalog giving sizes of completely machined and finished Bronze Bearings for practically all applications and Bunting Bearing Bronze Factory-Finished Tubular and Solid Bars. Ask your wholesaler . . . The Bunting Brass & Bronze Company, Toledo, Ohio. Warehouses in Principal Cities.

Bunting
BRONZE BUSHINGS • BEARINGS • PRECISION BRONZE BARS

▲ Mention Item NED-3499 when writing ▲

ELIMINATE
Dampness, Mold, Mildew with
WATER SORBER

WATER SORBER is the answer of experienced air-conditioning engineers to industry's problem of excess air moisture. This efficient, compact appliance uses cubes that are harmless, non-staining, easy to handle and inexpensive. One filling (10 lbs.) of this chemical absorbs—literally "soaks up"—from 10 to 15 lbs. of moisture from damp air.

WATER SORBER eliminates condensation, mold and mildew which causes damage to tools and other instruments, and to contents of food storehouses, freight cars, ships, telephone exchanges, etc. Also protects valuable office and shop records.

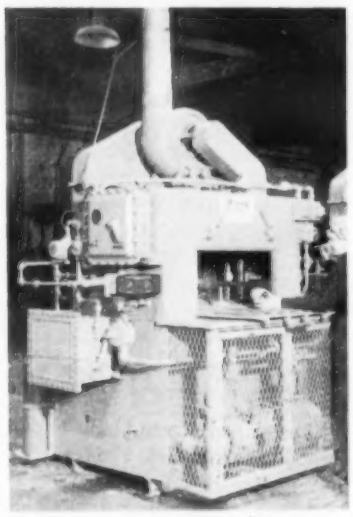
WATER SORBER has no moving parts. Two convenient sizes. Additional cubes for refilling available at reasonable cost.

Write today for Descriptive Folder N.

THE GENERAL
AIR CONDITIONING CORP.
4415 Appleton St.
CINCINNATI, OHIO

▲ Mention Item NED-3494 when writing ▲

PARTS WASHING MACHINE



Adaptable for production cleaning of such parts as bearings, castings, gears, shafts and machined work, Rotospray washing machine exposes all surfaces of parts to cleaning action. Unit consists of rotating mesh turntable which is 2 feet or larger in diameter, housing, motor and spray system.

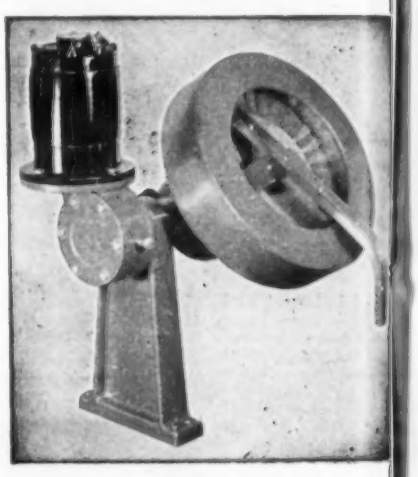
Parts to be cleaned are placed on turntable, door closed and quick-opening valve opened. Spray action is directed on all sides of work by nozzles on top, side and bottom of machine. After work has been cleaned, it can be rinsed with fresh water, if desired. Water is diverted to sewer by means of tilting drain plate coupled to water valve handle. This prevents water from contaminating or diluting cleaning solution.

Only one operator is required. Any commercial cleaning detergents can be used. Machine illustrated is fitted with explosion-proof switches and wiring, and built-in carbon dioxide fire protection system so that kerosene can be used as cleaner. Made by **Industrial Washing Machine Corp.**, 292 Burnet St., New Brunswick, N. J.

▲ Mention Item NED-3497 when writing ▲

HOPPER FEEDS
MOTORIZED HOPPER UNITS
FOR FEEDING:

SCREWS
SCREW BLANKS
NUTS
RIVETS
PINS
NUT BLANKS
WASHERS
DISCS
and many
SPECIAL PARTS



●

Send Samples and Information will be given as to pickup. *Also Prices*

Units Are Adaptable To Presses, Thread Rolling Machines and Special Machines

DETROIT POWER SCREWDRIVER CO.
2819 W. Fort St. Detroit, Mich.

▲ Mention Item NED-3500 when writing ▲

a new name
a better tool

benchmaster—the new name for quality bench machine tools—presents an improved vertical milling machine with horizontal milling attachment.

Table size—6"x14" • No. 2 Morse Taper Spindle • Spindle Speed—450, 2100 R.P.M. • **Vertical mill** (less motor) **$310 FOB Factory**
Horizontal Head (optional) **$75.**

benchmaster tools
manufacturing company
2952 w. pico, los angeles, calif.
formerly Duro Mfg. Co. of Los Angeles

▲ Mention Item NED-3495 when writing ▲

SpeedWay

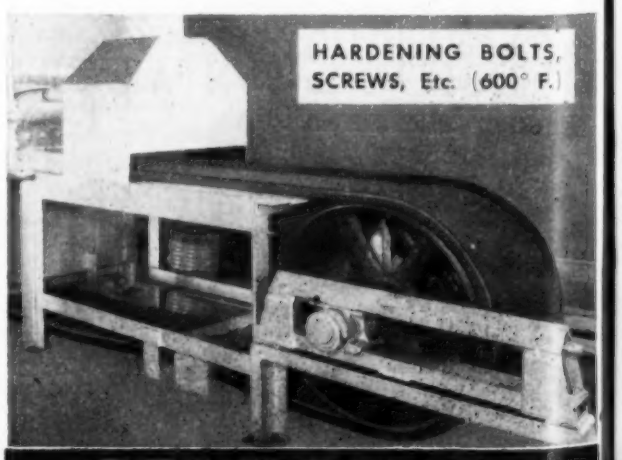
1/2" DRILL
$32.50
With Jacobs Chuck

MORE DRILL
for the Money

The last word in ½" capacity drills with every advanced feature. Powerful specially designed Universal Motor pours power thru triple reduction hardened steel gears. Forced air cooling prevents overheating. Housing is sturdy, light weight die casting. Self-aligning porous bronze bearings soak up oil like a sponge; release it slowly as bearing temperatures change. New type "in line" rear grip makes it natural to drill straight holes. One handle removable for close quarter drilling. Light weight (only 10¼ lbs.) means easy handling, yet it is so powerful that it will drill a ½" hole in iron with 300 lbs. weight on the bit. Jacobs key operated chuck. This is not a heavy duty production line tool, but it will give exceptional service to the garage man, maintenance man, contractor or installer.

SPEEDWAY MANUFACTURING COMPANY
1868 S. 52nd Avenue Cicero, Illinois

▲ Mention Item NED-3498 when writing ▲



CAMBRIDGE
WOVEN WIRE BELTING
for
TEMPERING
ANNEALING
SOLDERING
HARDENING
BRAZING
QUENCHING
All types of metal parts

Cambridge Rod—Reinforced Belts effect economies in hardening furnace operations. The low thermal capacity assures profitable fuel savings. The guard edge permits larger loads.

Write for free Copy 140 page catalog "Cambridge Conveyor Belting".

The CAMBRIDGE WIRE CLOTH CO.
Vienna Road Cambridge, Maryland

▲ Mention Item NED-3501 when writing ▲

STOP DUST with DUSTKOP

Efficient Model 1250 Dust Collectors For large wheel:

- Carbide Tool Grinders
- Surface Grinders
- Tool Grinders
- Disc Grinders
- Sanders
- Cut-Offs

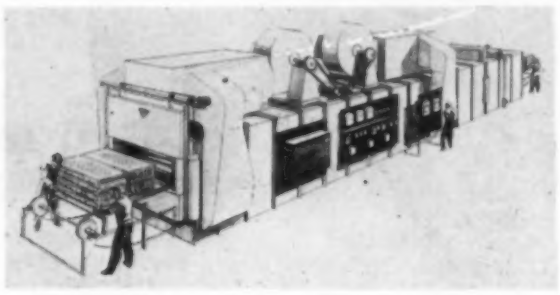
DUSTKOPS are compact, portable, entirely self-contained. Model 1250 has 1½ hp continuous duty motor. Spun glass filter is principally an extra safe-guard; seldom requires any attention. Proved in use on 24-hour schedules in many war production plants. Can be installed in minutes without duct work. Write for Bulletins.

AGET-DETROIT CO. — 2050 BOOK BLDG. — CADILLAC 3090 — DETROIT, 26

▲ Mention Item NED-3502 when writing ▲

HEAT TREATING PLANT

Heat treating, discharging and spray quenching of preformed aluminum aircraft sheets are accomplished automatically in this intermittent-conveyor type furnace. Time-cycle mechanism eliminates all human effort, except for initial loading and unloading. Installation consists of loading, furnace and spray-quench sections.



Loading section consists of open portion of conveyor belt, heavy twin chains forming conveyor which extends throughout unit. Chains travel at 1 foot per second, intermittently, operated by time-cycle control and synchronized with lift doors.

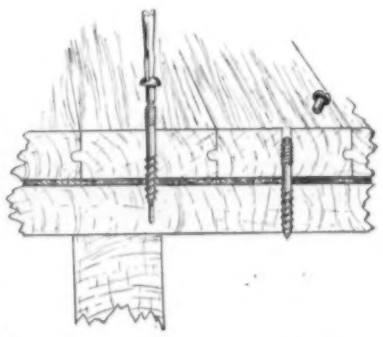
Furnace is 40 feet long, heated entirely by forced convection. Twin electric units provide zoned heat which raises cold loads to desired temperature quickly. Inflowing heated air is distributed evenly through adjusted ports into chamber. Temperature throughout work chamber is uniform within 5 degrees Fahr.

Quench section consists of chamber fitted with 320 spray nozzles, closely spaced and directed from all sides so as to quench hot load within a few seconds. Quench turns on and off automatically. Made by **Despatch Oven Co.**, 620 S. E. Ninth St., Minneapolis, Minn.

▲ Mention Item NED-3504 when writing ▲

NON-SLIPPING SCREW

Having two threads of different pitches, this No-Slip screw is claimed to lock any two materials together permanently. At each turn of screw, boards are pulled together by amount equal to difference between pitches of two threads. Properly installed, only small hole is left which can be filled with putty or plastic wood.



Fastening is particularly applicable in building construction, as well as for boats, truck and trailer bodies, furniture, store fixtures and cabinet work. It will hold down flooring so as to eliminate squeaking.

Screw is installed in previously drilled hole. Coarse threads pass through top boards and slightly larger fine threads take hold. As screw is driven further, boards become tightly joined. Top or head of screw may be broken off at groove with pliers and hole filled. Made by **Wil-Son Infra-Red Mfg. Corp.**, 154 W. Erie St., Chicago, Ill.

▲ Mention Item NED-3505 when writing ▲

*IT'S LAMSON'S

resourcefulness in solving tough handling problems!

● No this isn't a new anti-aircraft gun. It's just a new Lamson Conveyor designed to lift shell casings out of the pit beneath the drawing press and up to working level. It saves one man per press. It saves damage to the shell casings. And it means more finished shell casings per day for the fighting forces with a smaller demand on manpower. That's why we say that the technical proficiency and resourcefulness of Lamson Conveyor engineers constitute a real secret weapon in this War of Machines, a big gun in the Battle of Production.

LAMSON engineers may be able to save you fractions of minutes that mount into weeks and months when multiplied by many men and machines. It costs nothing to find out. Just write or wire.

LAMSON CORPORATION
SYRACUSE, N. Y.
Makers of CONVEYORS and PNEUMATIC DISPATCH TUBES

▲ Mention Item NED-3503 when writing ▲

but we used Hodgman Saran and delivered on time!*

When the history of this period is written, this is what many firms will be able to say. HODGMAN SARAN is more than a substitute — it is a permanent replacement for strategic materials such as copper, brass, steel, aluminum, rubber, etc., and deserves a thorough investigation by your engineering department . . . Write today for technical data sheet and free sample.

*SARAN PLASTIC PIPE, TUBING, FITTINGS are chemically resistant and non-corrosive — withstand a wide range of temperatures — are easily installed with ordinary simple tools.

*Pat. No. 2160931

HODGMAN RUBBER CO.
FRAMINGHAM, MASS.

NEW YORK . . . 261 Fifth Avenue
CHICAGO . . . 412 South Wells St.
SAN FRANCISCO . . . 121 Second St.

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EVERY PLANT NEEDS LUBRIPLATE

MACHINE PARTS ARE HARD TO GET

You can help make the machinery you now operate last much longer without trouble, delay and expense of repairs and replacements, by using LUBRIPLATE Lubricants.

In addition to giving better lubrication, LUBRIPLATE prevents rust and corrosion. It withstands water and does not wash out of bearings. LUBRIPLATE permits heavier loads on bearings, yet will not cause drag.

Every plant in every industry can obtain better lubrication at lower cost with LUBRIPLATE.

LUBRIPLATE DIVISION
FISKE BROTHERS REFINING COMPANY
NEWARK, N. J. **SINCE 1870** TOLEDO, O.
WRITE FOR THE NAME OF THE DEALER NEAR YOU

▲ Mention Item NED-3507 when writing ▲

DOALL MACHINES

Do a Good Job at CONSOLIDATED VULTEE

Cutting sheet aluminum at the Fort Worth home of B-24 Liberator Bombers and C-87 Liberator Express Transports. This is only one of many DoAlls in this modern plant.

MACHINES OF MANY USES

That's what Consolidated Vultee calls the DoAll, and it's a fact because

- DoAll does internal and external cutting of metals, alloys, plastics, etc. following a hairline design with unerring precision.
- Cuts out production parts, jigs, dies, fixtures, cams, templates, special tools, etc.
- Cuts 100 or more shapes at one time from stacked sheets.
- Makes short runs of stampings or forgings.
- Cuts out blocks, sheets, bars or tubing.
- Relieves heavy machine tools for other work.

DoAll is on the job on regular production lines, in experimental rooms, tool rooms and repair departments. DoAll smashes bottlenecks—beats former time records—gets jobs through on time.

Investigate this modern machine that does hundreds of shaper, milling and lathe jobs in a fraction of the time.

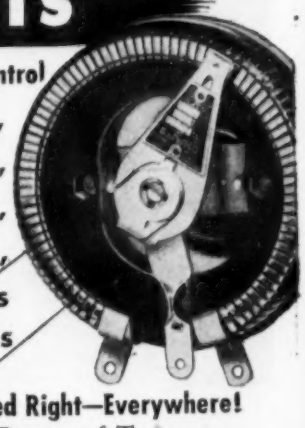
"DOALL ON PRODUCTION"—Interesting book, well illustrated, about DoAll performance in many plants. Write for copy today.

CONTINENTAL MACHINES, INC.
1314 S. Washington Ave., Minneapolis, Minn.

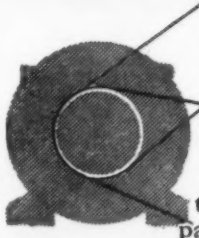
DoAll Offices in 25 cities, each in charge of a trained sales engineer to give you quick service on Contour Machines, Band Saws and Files, Gage Blocks and Surface Grinders.

▲ Mention Item NED-3508 when writing ▲

OHMITE RHEOSTATS



Permanently Smooth Close Control for Motor Speed, Generator Fields, Lamp Dimming, Electronic Tubes, Welding Apparatus and similar applications



Proved Right—Everywhere!

Wide Range of Types and Sizes. Units produced to Government Specifications.

Write on company letterhead for helpful 96-page guide in the selection and application of Rheostats, Resistors, Tap Switches.

BE RIGHT WITH OHMITE RHEOSTATS · RESISTORS · TAP SWITCHES

OHMITE MANUFACTURING CO.
4841 Flournoy St. · Chicago, U.S.A.

▲ Mention Item NED-3509 when writing ▲

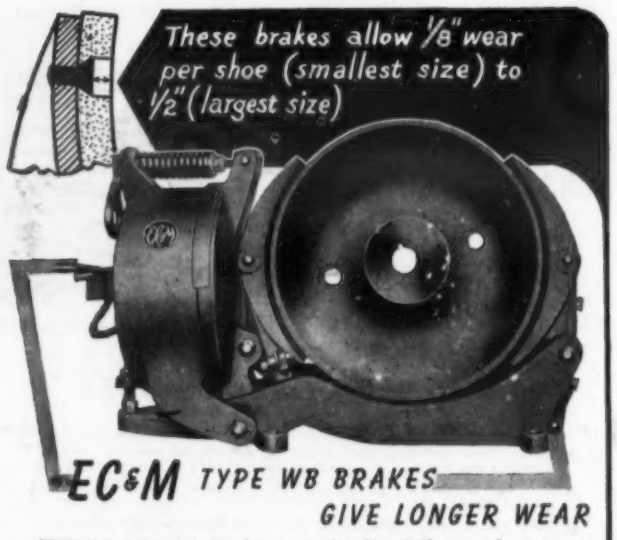
USE CUSHION TORQUE
—IT INCREASES OUTPUT

Kanti-Lever Coupling

If you want steady, uninterrupted production. . .lower machine-repair costs and freedom from bearing troubles, the Kanti-Lever is your answer, for it not only protects you against the evils of misalignment like the ordinary coupling, but it goes several steps further and protects your Motors and Productive Machines against the wear, vibration and fatigue that are the source of most machine failures. Over 3,000,000 horse power in operation. . . SEND FOR BULLETIN No. 28-D

BROWN ENGINEERING CO. 129 N. THIRD ST. READING, PA.

▲ Mention Item NED-3513 when writing ▲



EC&M TYPE WB BRAKES GIVE LONGER WEAR

THIS EC&M Brake is radically different from any other. *With no rods or levers over top of brake wheel,* motor-armature replacement is readily handled without dismantling brake or disturbing any adjustments.

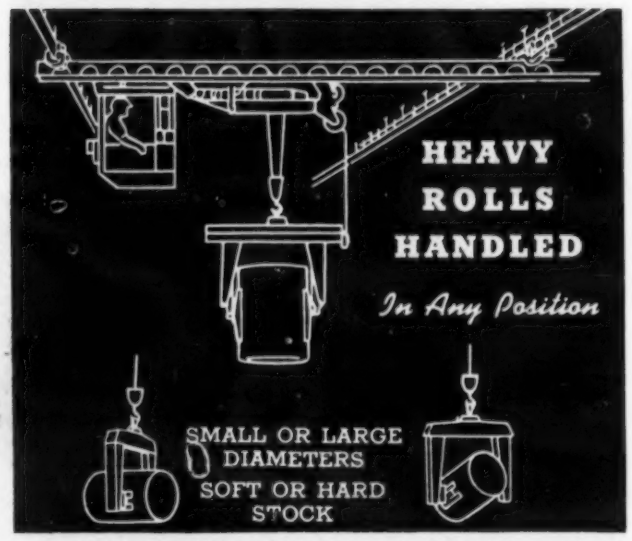
And the standard feature of *Manual Release* with this Brake is a valuable ally—when setting machinery, making adjustments, replacing shoes or in lowering a crane load in an emergency.

Ask for Bulletin 1004-C.

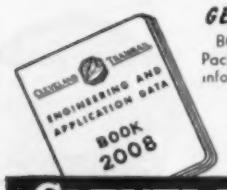
THE ELECTRIC CONTROLLER & MFG. CO.
CLEVELAND, OHIO

BRAKES MAGNETS LIMIT-STOPS MOTOR-CONTROL

▲ Mention Iter NED-3514 when writing ▲



A Cleveland Tramrail System with motor-driven roll grab picks up, delivers and sets in place rolls from 16-inch to 60-inch diameter, in lengths to 72 inches and weights up to 5,000 pounds. All motions of the crane and grab are controlled by operator without need of leaving cab.



GET THIS BOOK! BOOK No. 2008 Packed with valuable information . .

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
1143 East 283rd Street Wickliffe, Ohio

CLEVELAND TRAMRAIL

▲ Mention Item NED-3515 when writing ▲

OPTICAL COMPARATOR

Accurate inspection of contour of small parts, surface examination, strain location and stereo projection are possible with this optical contour comparator. In addition to being used in checking and inspection operations, equipment is applicable as surface illuminator and opaque projector.

Magnifications of 24 times original size are obtained on 9 x 15 inch screen. Light from 110-115-volt alternating current lamp is focused into powerful beam by aspheric condenser lens system. At present, instrument cannot be operated on direct current.

Because it is compact and light in weight, device can be set up for use near work. It will operate equally well in vertical or horizontal position. Single adjustment brings image into sharp focus and no darkening of workroom is required. Made by Fish-Schurman Corp., 226 E. Forty-fifth St., New York City.

▲ Mention Item NED-3516 when writing ▲

BLIND RIVET POWER GUN

Designed for high speed application of Cherry blind rivets in double surfaced structures where access to one side of work is obstructed, No. G15 power gun will install up to 1600 rivets per hour. Pneumatically actuated, tool is improvement over previous pneumatic-hydraulic types. Fewer parts are used. Tool is balanced and smooth acting. Weighing 4½ pounds, gun operates on 75 to 100 pounds per square inch air pressure.

Three interchangeable pulling heads handle 1/8, 5/32 and 3/16-hollow or self-plugging Cherry rivets. Made by Cherry Rivet Co., 231 Winston St., Los Angeles, Calif.

▲ Mention Item NED-3517 when writing ▲

PRESSURE TESTING GAGES

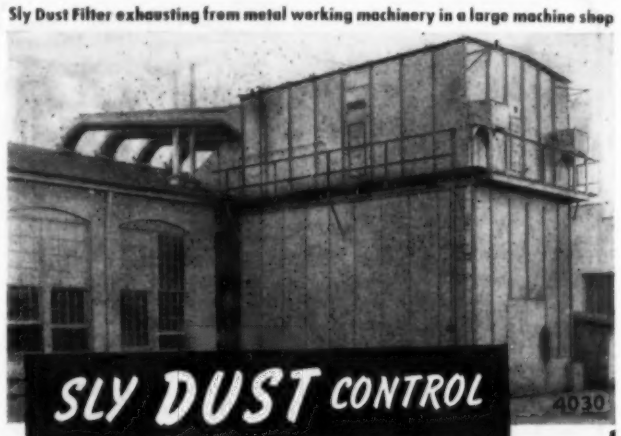
Designed for measurement of tensions, pressures, mechanical reactions, breaking strains and other light forces of from ½ gram to 100 pounds, Push-Pull gages are small, light weight

and compact. Each gage is individually calibrated, manufactured to precision limits and guaranteed to be accurate within one graduation mark, it is claimed.

With these gages inexperienced workers can duplicate or improve upon results obtained by skilled workers depending upon "feel" acquired after years of practice. Gages are sufficiently low in cost to permit use in quantity as shop test equipment or as standard equipment for field test kits. Made by John Chatillon & Sons, 93 Cliff St., New York City.

▲ Mention Item NED-3518 when writing ▲

Sly Dust Filter exhausting from metal working machinery in a large machine shop



Due to the efficiency of their special cloth screens, Sly Dust Filters collect even this extremely fine dust.

Briefly, Sly Filters offer you:

1. Greater filtering capacity because of more filtering cloth
2. Taut bags (patented) save power and improve dust removal
3. Bags more easily replaced
4. Automatic control (any degree) minimizes or entirely removes the human factor
5. Simpler shaker mechanism results in savings in maintenance and operation

Ask for Bulletin 98 and tell us about your dust problem so that we may write you fully.

SLY THE W. W. SLY MFG. CO.
4748 TRAIN AVE., CLEVELAND, O.
INDUSTRIAL DUST CONTROL

▲ Mention Item NED-3519 when writing ▲

HERE'S WHY ROPER PUMPS perform better ...last longer!

ONLY 2 MOVING PARTS

GEARS THAT *float* IN OPERATION!

HYDRAULICALLY BALANCED

The pumping gears in ROPER "hydraulically balanced" PUMPS have hollow shafts so that internal pressure is equalized at all points. These gears, entirely separate from the drive shaft, are connected only by a sliding joint which permits them to actually "float" in operation. This sliding joint plus a special collar on shaft absorbs shock or end thrust.

Big savings in time and money because "hydraulically balanced" pumps are more efficient, last longer and permit periodic inspection of internal parts without disturbing piping or power unit.

Replaceable Bearings

The 4 large bearings (two on each side) in ROPER PUMPS are designed and constructed to withstand severe operating abuses and adequately handle peak loads. These flanged high lead Bronze bearings also act as wear-plates to protect face and back-plate from wear. Can be replaced easily and inexpensively.

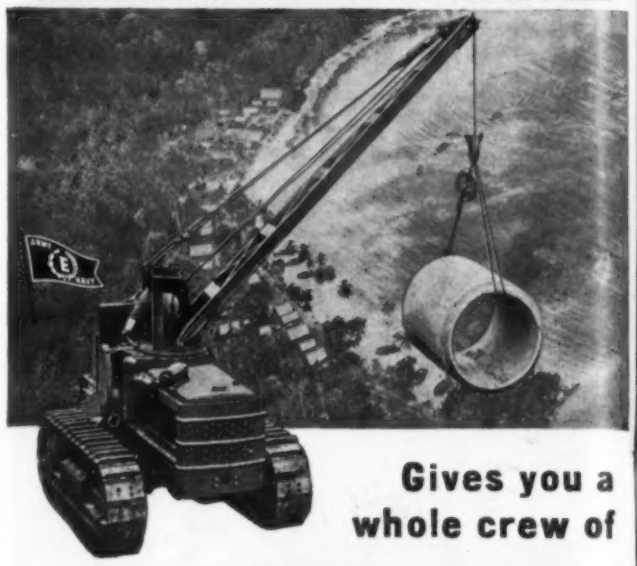
Write For Catalog No. 749

ROPER Rotary Pumps

GEO. D. ROPER CORP., ROCKFORD, ILL.

▲ Mention Item NED-3520 when writing ▲

Guadalcanal Invasion Landing (Official U.S. Navy Photo). Roustabout Cranes are hustling war materiel at home and overseas.



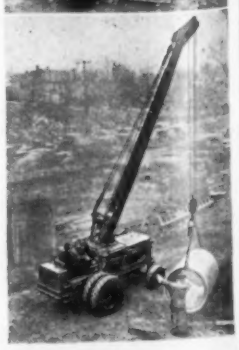
Gives you a whole crew of

TIRELESS ROUSTABOUTS

The Free-Roving Tractor-Footed

ROUSTABOUT CRANE

THIS powerful brute far more than earns his keep around your factory, yard, dock, warehouse or airport. He moves stuff where and when you need it moved—no delays, no taking men from other work. Easy to operate, all tractor power, Roustabout Crane can pick up a bulky load and lay it down as gently as if it were a sleeping baby—or slam 5 tons into a freight car without a grunt. Many hundreds of them on wheels or crawler tracks are doing it today for industrial and transport organizations and our fighting services around the world. For fast action now, for postwar cost cutting, write at once for the facts.



FULL BOOM SWING ➡

on heavy ball-bearing turntable, all gears enclosed in oil—ruggedly built for years of overwork.

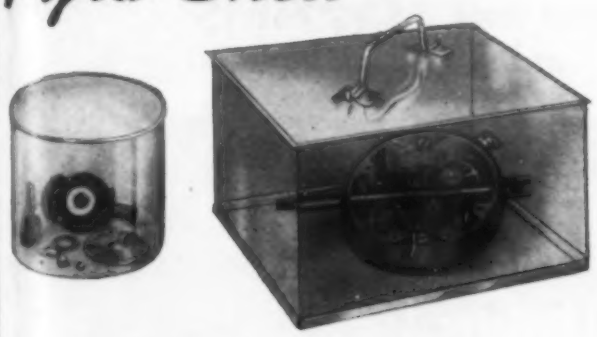
THE HUGHES-KEENAN COMPANY
565 Newman St. Mansfield, Ohio

Keep 'em Flying — Buy U.S. War Bonds

ROUSTABOUT CRANES By Hughes-Keenan
Load-Handling Specialists Since 1904

▲ Mention Item NED-3521 when writing ▲

Pyra-Shell



DUST PROTECTORS
For Assembly or Repair Work

These sturdy Dust Covers will protect vital items of war equipment against dust and grit, while on the production assembly line or in repair departments.

Made of the same fine quality material as the nationally-known Pyra-Shell Utility Boxes, these Dust Covers are completely transparent and light in weight. These features assure quick, easy handling and speed up war production. Round, square or oblong styles can be made to any size for special requirements.

Write for descriptive folder. Give dimensions of Dust Covers you may require. Address Dept. D.

SHOE FORM CO. Inc. AUBURN, N. Y.

▲ Mention Item NED-3523 when writing ▲

Control unit of the Rauland AMPLICALL Sound System

THE ELUSIVE MR. ELLIS

Like thousands of other busy executives Mr. Ellis is constantly on the move directing vital plant operations. Away from their desks these key men are hard to find, but *AMPLICALL* Intercommunication and Paging locates them in *split-seconds! AMPLICALL* Sound Systems are *getting things done fast*... saving thousands of precious man-hours for war plants everywhere. Let us show you how.

Electroneering is our business

Rauland

Buy War Bonds and Stamps

RADIO...SOUND...COMMUNICATIONS
The Rauland Corporation...Chicago, Illinois

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RESISTORS
FOR
Industry Research Communications

IRC makes resistor units of more types, in more shapes, for more applications than any other manufacturer in the world.

PREFERRED FOR PERFORMANCE
IRC
FIXED & VARIABLE RESISTORS

INTERNATIONAL RESISTANCE COMPANY
409 N. BROAD STREET, PHILADELPHIA

▲ Mention Item NED-3524 when writing ▲

METAL CUTTING BANDSAW

Adaptable for cut off, trim and contour work, Roll-In metal cutting bandsaw incorporates gravity feed principle. Saw blade feeds into work through movement of balanced blade wheel frame on inclined track. Blade pressure is automatically regulated by texture and degree of hardness of metal being cut. Swivel block for holding work is instantly removable for contour jobs or long straight cuts. Maximum cut is 7 inches vertically.

Saw operates at three speeds of 81, 161 and 264 feet per minute. It is equipped with work holding block, clamping vise and ½ horsepower, 110-volt, 60-cycle, alternating current, sleeve bearing motor. Made by Universal Vise & Tool Co., 106 Main St., Parma, Mich.

▲ Mention Item NED-3525 when writing ▲

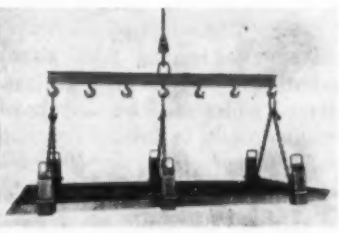
MARKING STAMP HOLDER

Multiple type changes are readily made in this Time-saver marking stamp holder by simple turn of screw. Tool is designed to hold up to eight pieces of marking type. Holders for 12 pieces in one, two or more lines can be made to order. Styles of holders are available for hand or press use.

Type is made of tool steel, as is holder. Hand engraved, hardened type is available in letters, numbers and symbols. Made by Sossner Tool & Machine Works, Inc., 161 Grand St., New York City.

▲ Mention Item NED-3526 when writing ▲

SHEET STEEL GRAB



Adapted to handle all lengths of sheet steel bundles, this grab has lifting capacity up to three tons. Single grab is used for short bundles, two grabs hooked to supporting beam for medium bundles and three grabs for longer bundles. Supporting beam is 6 feet long. Sizes of bundles may vary from 18 to 48 inches in width and from 0 to 9 inches in thickness. Grab hook takes up slack in chain when low head room requires. Complete unit weighs approximately 190 pounds. Made by Palmer-Shile Co., 7116 W. Jefferson Ave., Detroit, Mich.

▲ Mention Item NED-3527 when writing ▲

Announcing
A SHEAR HARDNESS ATTACHMENT FOR Taber ABRASER

● NOW each Taber Abraser can be used for two entirely different surface finish tests.

1. Accurate measurement of toughness, quality and ability to resist digs, scrapes, and similar surface damage other than normal wear by shear-hardness attachment.

2. Scientific evaluation of resistance of surface finishes to ordinary rubbing abrasion.

Write for Bulletin 4012 illustrating wide applications.

TABER INSTRUMENT CORPORATION
111 ND GOUNDRY STREET, NORTH TONAWANDA, N.Y.
Designers and Builders of Scientific and Precision Apparatus

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1/2 to 2 hp—single phase, polyphase

End shields and frame are solid cast iron, smoothly shaped and tightly fitted. Ball bearings are protected by rotating-labyrinth seals—against damaging dusts and liquids. All the extra-protection features of Tri-Clad open motors. Mounting dimensions interchangeable with those of open motors of like rating.

For complete information, see your G-E representative, or write to General Electric, Schenectady, N. Y.

GENERAL ELECTRIC

▲ Mention Item NED-3529 when writing ▲

MOTORIZED PLANETARY REDUCER
Horizontal drive, made in 35 sizes in ratios of 10 to 1200:1 and from ¾ to 75 horsepower.

D.O.JAMES
MOTORIZED SPEED REDUCERS

MOTORIZED HELICAL REDUCER
Horizontal drive—made in 13 sizes in ratios of 1¼ to 9¼:1 and from ¾ to 50 horsepower.

MOTORIZED WORM GEAR REDUCER
Horizontal drive—made in 11 sizes in ratios of 6 to 80:1 and from ⅙ to 50 horsepower.

SAVE ESSENTIAL AND VALUABLE SPACE

War time requirements make the D.O.James Motorized Reducers a very important Must in solving and meeting the power-saving needs of modern industry. Their accessibility and compactness make them most desirable when floor space is limited. Their soundness of design and manufacture insures maximum efficiency with minimum maintenance.

D.O.JAMES MANUFACTURING CO.
Established 1888
1140 W. Monroe Street Chicago, U. S. A.

▲ Mention Item NED-3530 when writing ▲

Test blocks show the difference between corrosive action of B-H INSULATING CEMENT and ordinary insulating cement.

B-H INSULATING CEMENT HAS LICKED CORROSION

A perfect bond — that's the punch in Baldwin-Hill Insulating Cement. Moisture in ordinary insulating cement sets up a rusting action releasing the bond, causing peeling and falling.

B-H Insulating Cement is non-corrosive, whether applied on a hot surface or is allowed to air-dry over a long period of time. On application involving wire this is more important than ever with galvanizing "out" for the duration.

With the famous B-H *black* rock-wool as a base, B-H Insulating Cement is the ideal maintenance insulation, effective up to 1800° F. It has an exceptionally high adhesive characteristic. Gives high coverage with minimum shrinkage.

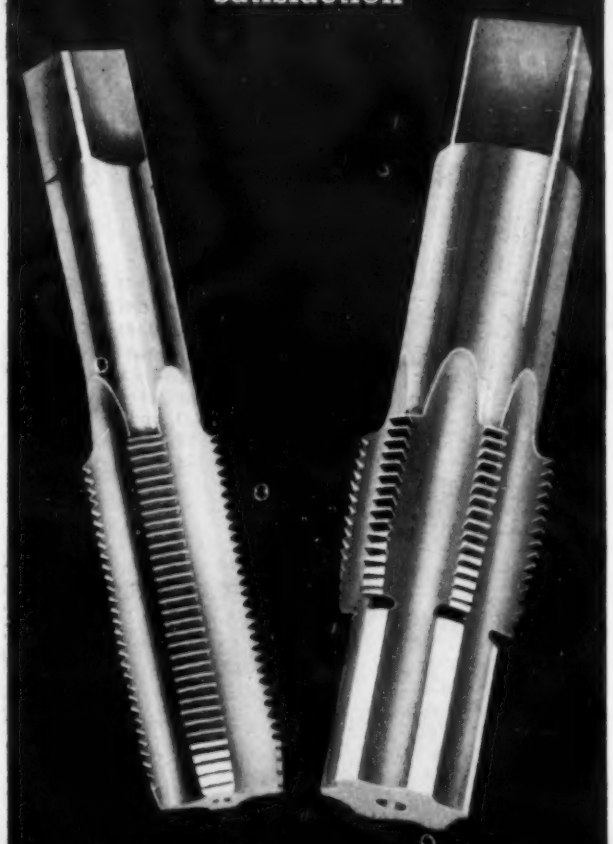
These important advantages of B-H Insulating Cement result in worth-while savings. Let us send a generous free sample for your own tests. Write now.

BALDWIN-HILL COMPANY
Insulations
541 KLAGG AVE.
TRENTON, N. J.

Branches in: NEW YORK • CHICAGO KALAMAZOO

▲ Mention Item NED-3531 when writing ▲

OUR 33-year reputation for reliability and precision workmanship is **YOUR** assurance of satisfaction



STANDARD TAPS • SPECIAL TAPS

High speed, precision ground from solid stock. In American National, full or modified Whitworth, and British Association threads.

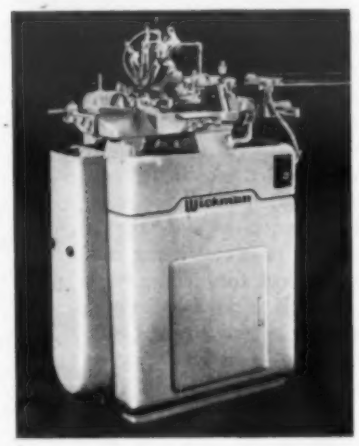
ALSO: STEEL STAMPS • GAGES • CUTTING TOOLS

SOSSNER

161 Grand St., New York City 13, or
27 Broadway, Lynbrook, N. Y.

▲ Mention Item NED-3532 when writing ▲

PRECISION AUTOMATIC



Facilitating the manufacture of extremely small slender parts requiring precision limits and fine finish, No. 1 high speed Swiss-type automatic has 5/32-inch diameter bar capacity and maximum turning length of 1-9/16 inches. Spindle speeds range from 1500 to 12,000 revolutions per minute and machine cycles vary from two seconds to five minutes. Design is such that tungsten carbide cutting tools may be used. Limits of plus or minus 0.0002 inch on diameter and concentricity can be maintained. Pivot points, back shoulders, multiple diameters, tapers, bevels and similar operations may be produced in single cycle. Headstock carrying bar stock and tools performing cutting operations are controlled by cams. Attachments for performing drilling, chamfering, counter-boring, tapping, threading and slotting operations can be furnished. Made by The Wickman Corp., 15535 Woodrow Wilson Ave., Detroit, Mich.

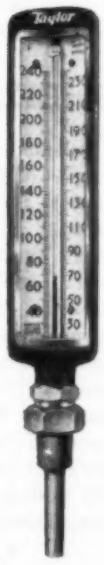
▲ Mention Item NED-3533 when writing ▲

DERMATOSES PREVENTIVE

Greaseless and non-irritating, Tarbonis cream is recommended for treatment and prevention of industrial dermatoses due to chemical irritation, chronic exposure to abrasives, work with cutting oils, reagents, acids and similar allergens. Formula of this modified tar product has been released for commercial industrial use only within the last year, it is claimed. Cream may safely be used by worker at home as well as dispensed in plant. Made by The Tarbonis Co., 1224 Huron Rd., Cleveland, Ohio.

▲ Mention Item NED-3534 when writing ▲

INDUSTRIAL THERMOMETER



Available in standard scale lengths of 7 and 9 inches, this one piece industrial thermometer was designed to effect saving in critical metals. One piece case is shallower which makes it possible to see mercury column through wider angle of vision. Chromium plated bezel fits snugly into grooved case holding thick glass front securely against four wavy tension springs. Springs are fastened under scale by shakeproof screws. Construction results in dustproof, rattleproof and practically fumeproof thermometer.

Instruments will be equipped with Binoc tubing and will be furnished in many combinations of straight and angle stems, with threaded or union connections and in standard temperature ranges, within limits of minus 40 to plus 750 degrees Fahr. Numerals are bold and clear, making thermometer easy to read at all times. Made by Taylor Instrument Companies, P. O. Box 110, Rochester 1, N. Y.

▲ Mention Item NED-3535 when writing ▲

"WAR-AID" Fluorescent Fixtures by Wheeler . . .

. . . offer high-intensity "skilled lighting" for warplants

. . . conserve critical materials

Here's efficient warplant lighting that maintains Wheeler's "skilled lighting" standards, in spite of wartime metal shortage.

"War-Aid" RLM Fluorescent Fixtures have sturdy metal-conserving wiring channels and non-metallic reflectors. Chip-proof washable reflecting surfaces. Reflection factor not less than 84%. Available for 2 or 3 40-watt lamps or two 100-watt lamps. Easily adapted for continuous runs. Suspension by "C-clamp" slide hangers, conduit or chain.

Write for detailed Bulletin. Wheeler Reflector Company, 275 Congress Street, Boston, Mass. . . . New York . . . Cleveland. Representatives in principal cities.

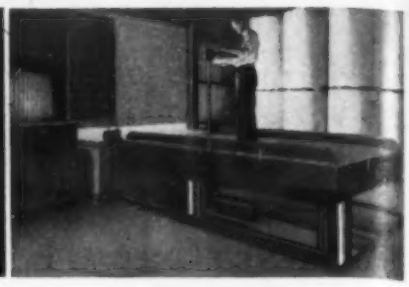
Distributed Exclusively Through Electrical Wholesalers

Wheeler REFLECTOR COMPANY
Lighting Equipment Specialists Since 1881

▲ Mention Item NED-3536 when writing ▲

How to break those LOG JAMS at the Loading Dock...

Install a Rotary Levelator



When materials pile up at the Loading Dock, production slows down. HERE'S HOW LEVELATORS SOLVE THE PROBLEM of keeping in and out shipments flowing smoothly.

QUICKER LOADING . . . LESS MANPOWER . . . NO INCLINES

The Levelator is a simple, rugged elevating device which quickly hauls loads between floor and dock at the flip of a lever or press of a button. Even the dock itself can be eliminated by loading directly into freight cars or trucks.

EVEN A SINGLE INEXPERIENCED MAN CAN HANDLE FULL LOADS—RAPIDLY—SAFELY!

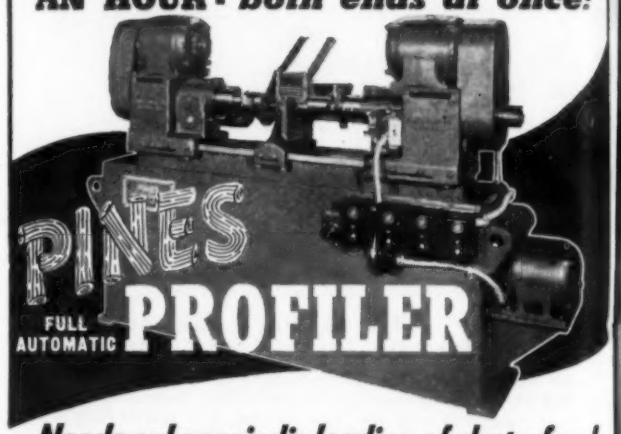
OPERATION: The platform rises when oil under pressure is pumped into the powerful hydraulic jack, or jacks (see picture). The principle is similar to Rotary's Automobile Lifts found in most modern gasoline stations. A single jack is used on average applications . . . dual-equalized jacks on longer platform, heavier duty jobs. Control located where desired. Safety features include metal skirting, bevel toe-guards, automatic chocks, etc.

Write for complete details today. Rotary Lift Company, 1076 Kansas St., Memphis 2, Tenn.

Rotary MEMPHIS LEVELATORS

▲ Mention Item NED-3537 when writing ▲

POINTS 500 RODS AN HOUR - *both ends at once!*



PINES FULL AUTOMATIC PROFILER

Needs only periodic loading of chute feed

Also PIPE & TUBE BENDERS

PINES PROFILERS center, bore, burr, thread, face, chamfer, ream both ends of tubes and rods simultaneously — combine as many as 3 operations at once — slash costs — push up production—use unskilled, lower wage help — quickly pay for themselves!

Phone, Wire or Write for Further Information

PINES ENGINEERING CO., INC.
640 Prairie AURORA, ILLINOIS
SPECIALISTS IN TUBE FABRICATING EQUIPMENT

▲ Mention Item NED-3538 when writing ▲

BAY STATE
ABRASIVE PRODUCTS CO., CO., WESTBORO, MASS. U.S.A.

▲ Mention Item NED-3539 when writing ▲

They're the NUTS For Tough Fastening Jobs

• There are more Elastic Stop Nuts in America's planes, tanks, guns, naval vessels and production equipment than all other lock nuts *combined.*

All because these nuts stay put.

The reason is the red elastic locking ring in the top. This grips the bolt and holds the threads in pressure contact. And chance of wobbling and axial play is eliminated.

Looking ahead, we see better products and manufacturing equipment—we see time and money saved in maintenance and replacements—all because of these nuts that have proved they hold fast even under grueling vibration—that are easy to put on and take off yet lock automatically anywhere on the bolt.

Our engineers, experienced in solving fastening problems both in peace and war, are ready to share their knowledge with you. They will gladly work with you and recommend the correct Elastic Stop Nut to meet your need.

ELASTIC STOP NUTS

Lock fast to make things last

ESNA TRADE MARK

ELASTIC STOP NUT CORPORATION OF AMERICA
UNION, NEW JERSEY AND LINCOLN, NEBRASKA

▲ Mention Item NED-3540 when writing ▲

54 WAYS

TO SIMPLIFY AND SPEED-UP YOUR MAINTENANCE WORK

This NEW Oakite Digest describes time-tested tips and short cuts for expediting 54 important maintenance jobs.

Based on the successful experience of thousands of plants, these ideas and suggestions will HELP YOU, too, save time, conserve manpower and increase efficiency . . . put ALL your maintenance cleaning routines on a FASTER, EASIER, less costly basis. In data sheet form, it gives concise information for quick, ready reference. Write today for your FREE copy . . . there's no obligation!

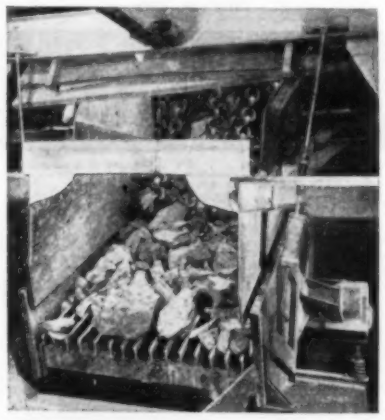
OAKITE PRODUCTS, INC., 32G THAMES ST., NEW YORK, N. Y.
Technical Service Representatives in All Principal Cities of the United States and Canada

OAKITE — Buy Bonds for Victory — CLEANING
MATERIALS · METHODS · SERVICE — FOR EVERY CLEANING REQUIREMENT

▲ Mention Item NED-3541 when writing ▲

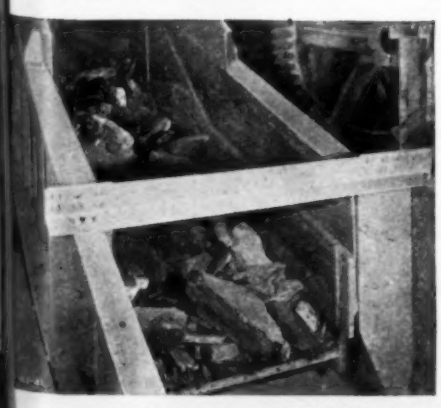
JEFFREY TRAYLOR FEEDERS

The basis of which is Balanced High Frequency Vibration under Absolute Control. They give a new conception of feed control—rate can be changed at will while unit is running. J-T Feeders have proved their merit on hundreds of jobs where positive control over tonnage is the demand.



J-T 8' wide grizzly feeder (right) controlling feed and by-passing fines ahead of primary crusher.

The Jeffrey Manufacturing Company
952-99 North Fourth St. Columbus, Ohio



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St. Louis
Salt Lake City
Scranton

J-T 5' wide feeder (left) handling run of quarry material from skip hoist hopper to crusher in a large cement plant.

▲ Mention Item NED-3542 when writing ▲

SODIUM INSPECTION LIGHT

Monochromatic nature of light from this sodium vapor inspection light permits needle sharp focus and human eye is most sensitive to soft yellow color. For inspection purposes, illumination results in improved vision with less eye strain. Minute cracks or markings which are invisible under ordinary light are disclosed under sodium vapor light. Monochromatic light is also of advantage in checking surfaces or parts by means of optical gages for flatness, parallelism, length and thickness.

Light may be used for identification of Z axis in quartz crystals, analysis of organic compounds by polarized light and micro-photography. Fixture is made in several types, model illustrated being of bench type. Made by **Geo. W. Gates & Co.**, Franklin Square, Long Island, N. Y.

▲ Mention Item NED-3543 when writing ▲

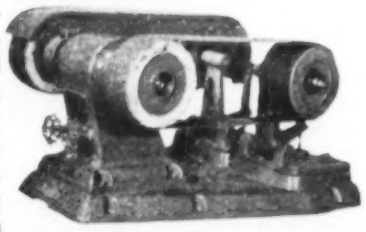
WELDING POSITIONER

Capable of handling loads up to 500 pounds with center of gravity of load 6 inches away from table top and with 6-inch eccentricity, these welding positioners are available in hand or motor operated models. They are particularly suited to work ordinarily handled by women welders. Motorized unit includes Reeves variable speed drive providing table top speed range of up to 1 revolution per minute. Tilting range is full 135 degrees from horizontal providing "down under" position for all downhand welds.

Machine can be furnished with regular base for bench work or with sub-base giving height adjustment from 27 up to 42 inches from floor line to table top. Clutch arrangement permits free rotation of table top by hand when required. Motorized units can be supplied with hand wheel in lieu of motor for tilting if desired. Made by Industrial Div., **Ransome Machinery Co.**, 842 Ned St., Dunellen, N. J.

▲ Mention Item NED-3544 when writing ▲

BENCH TYPE GRINDER



Serving both as grinder and polishing machine, this No. 135 bench type abrasive belt machine is designed for production work. It is applicable for deburring, grinding and finishing operations. Endless abrasive belts are adaptable to practically any type of work from flat pieces to irregularly shaped parts.

Ball bearing equipped, machine is available for use with any ¾ to 2-horsepower motor. Adjustable spring device on idler pulley maintains belt tension. Segment face contact wheel is of cushioned construction. Made by **Jones Engineering Co.**, Ellwood City, Pa.

▲ Mention Item NED-3545 when writing ▲

GET MAXIMUM PROTECTION with GENERAL BOXES

• The extra strength of General Wirebound Containers is due to their scientific design—reversing the common belief that the heavier the box, the greater its strength. They're made from selected woods, bound with wire to give the shipments the strength of steel. They're laboratory planned to give maximum protection with a minimum amount of tare weight. Write for full details.

For manufacturers of war products: General Heavy Duty Wirebound and Nailed Wooden BOXES and CRATES.

Where availability of materials permits: Corrugated BOXES and Wooden Cleated Fibreboard CRATES and Generalites and Nailed Strapped Beverage CASES for domestic service.

GENERAL BOX COMPANY

General Offices:
Corner of Dearborn & III. Sts., Chicago, Illinois
District Offices and Plants: Brooklyn, Cincinnati, Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon: Continental Box Company, Inc.: Houston, Dallas.

▲ Mention Item NED-3546 when writing ▲

Model 4-5-E-16-Q, Predetermined Counter

Air Superiority!

Speed production, double, triple each day's schedules of parts needed for bombers, fighters, pursuit planes . . . engines, guns, torpedoes, bombs! "Keeping 'em flying" demands the supreme effort of every man, every machine on the production line.

PRODUCTIMETERS give accurate count or measurement for production control on this vital front. They conserve man-hours, prevent waste. There's a standard Productimeter for practically every need, Stroke, Rotary, Lineal, Wire Measuring, Conveyor, Predetermined, Electric. They're built for speed, accuracy, and day after day hard use.

Send for your copy of Bulletin No. 100

DURANT MANUFACTURING CO.
1922 N. Buffum Street, Milwaukee, Wis. — 178A Eddy Street, Providence, R. I.

▲ Mention Item NED-3547 when writing ▲

YOU'LL NEVER HAVE TO BLAME THE SWITCH!

We needed a switch that would always work—for our own machines. So we built one—and proved its performance—on our own machines, where we don't even consider the possibility of switch failure.

Then we offered the same switch, named Snap-Lock, to other machine builders. Over two thousand of them are now using Snap-Locks—and the first case of failure has yet to be reported!

In Any Combination

The basic Snap-Lock Switch unit is available in any combination—in flush or box types—1-2-3-4 station standard. Or tell us what you want to accomplish, and we'll work it out for you.

On Any Machine

Snap-Lock Switches are now on thousands of machines doing precision war work. That is your assurance that they will stand up in heavy duty, 24-hour service—wherever push button switches are used.

BULLETIN EM-43 WILL BRING YOU COMPLETE INFORMATION

ELECTRICAL MANUFACTURING DIVISION
THE NATIONAL ACME CO.
CLEVELAND, OHIO

▲ Mention Item NED-3548 when writing ▲

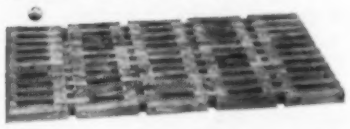
HAND TRUCK

for . . .
BULK Materials
SMALL PARTS
SCRAP

More convenient to handle, and with greater capacity than a wheelbarrow, this new 12-gage metal, leakproof hand truck was originally designed for a large defense plant . . . NOW AVAILABLE FOR GENERAL USE. . . Sizes: 25¾" x 45" top; 25¾" x 27" bottom; 17½" deep; weighs 125 lbs. . . . Perfectly balanced for unloading . . . equipped with two 8" semi-steel wheels and two 4" ballbearing swivel casters . . . $46.50, F.O.B. Detroit . . Special sizes and construction to meet individual requirements.

— ALL-WOOD FLOOR MAT —

Water and Oil Resistant . . .
Reduces Fatigue
Priority Free



No priority is required for this mat that is better than rubber under many conditions—unaffected by oil, does not creep, has ample openings to receive chips, and is readily cleaned . . . Stock sizes: 18" x 28"; 18" x 29"; 24" x 51"; and 24" x 75"—all mats 1⅛" thick. Special sizes to order. Constructed of soft wood blocks hinged and held together by hardwood dowels—all edges are rounded.

Place your order today, or let us send you further information

FISHER EQUIPMENT COMPANY
6315 ELLSWORTH AVE. DETROIT, MICH.

▲ Mention Item NED-3551 when writing ▲

WHERE AIRCRAFT RUN ON "ROADS"...
HI-WAY Spreaders are on the job!

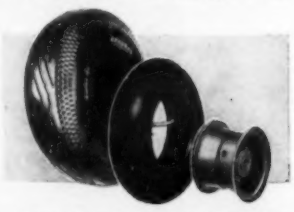
...equipped with
GENERAL Jumbo Jrs.

Today's paving jobs, whether on airport runways or on the highway, must keep pace with these strenuous times . . . must be completed *fast*, with *maximum efficiency*. That's why you'll find HI-WAY Spreaders, manufactured by the Highway Equipment Co., Cedar Rapids, Iowa, on important paving jobs. HI-WAY Spreaders equipped with GENERAL Jumbo Jrs.—*industrial pneumatic tire favorite!*

For regardless of the job to be done—engineers know that the General Jumbo Jr. *tire-tube-wheel* combination is the team to pick! Jumbo Jrs. are in action today on every type of job . . . speeding factory movement of vital war materials, carrying heavy loads, protecting fragile parts . . . demonstrating more than ever GENERAL'S famous quality.

General Jumbo Jrs. roll easily anywhere . . . cushion and protect load, truck, floor or dock. Traction is exceptional—filings, chips and clippings aren't picked up. Exclusive and patented, Jumbo Jrs' design makes possible service unequalled by any other pneumatic industrial tire! *For further information write or call:*

THE GENERAL TIRE & RUBBER CO.
AKRON, OHIO



Tires 8" to 24" overall diameter. Load capacity 100 lbs. to 1500 lbs. per tire. 2-4-6 and 8-ply with separate tubes and heavy duty wheels.

Available in new air corps specification sizes. Also for war orders and for certain essential industrial uses.

COPYRIGHT 1943, THE GENERAL TIRE & RUBBER CO., AKRON, O.

GENERAL JUMBO JR. INDUSTRIAL BALLOON TIRES

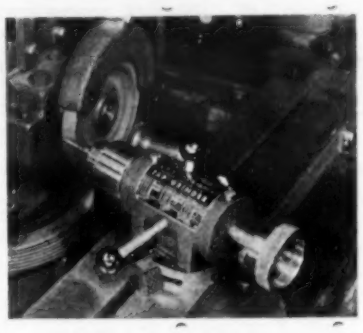
▲ Mention Item NED-3552 when writing ▲

RELEASING HINGE

Originally developed for ordnance use, this Quick Release hinge has wide range of applications on machine tools, generator housings, automotive equipment, doors, marine hatch covers, cowlings, cabinet lids and wherever hinged hoods or surfaces must be occasionally removed for cleaning or service. Device is composed of bracket which houses spring loaded attaching pins. Bracket is equipped with finger pads to retract pins. When pads are forced together, hinged part is entirely free. Present models are available in several bracket designs and in lengths from 2 to 6 inches. Made by Burklyn Co., Dept. NED, 3429 Glendale Blvd., Los Angeles, Calif.

▲ Mention Item NED-3553 when writing ▲

TAP GRINDER ATTACHMENT



Suitable for use on any type of flat table grinder, tool and cutter grinders, surface grinders, cylindrical grinders and even bench lathes, this tap grinder attachment makes possible precision resharpening of taps. All adjustments are simple through built-in chamfer protractor; shifter for 2, 3 or 4 flutes; variable relief adjustment screw and chamfer diagram on index plate. Device will accommodate taps ranging in size up to ¾ inch. Made by Reading Machine Co., 500 Main St., Reading (Cincinnati), Ohio.

▲ Mention Item NED-3554 when writing ▲

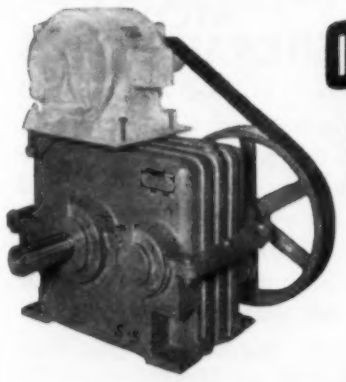
DIAMOND ABRASIVE WHEELS

Increased range of thicknesses, which vary from 1/16 to ½ inch, adapt Di-Met Rimlock diamond abrasive wheels to wide variety of operations. Diameters range from 1 to 6 inches and standard ⅝-inch arbor holes or special hole sizes can be furnished. These heavy body wheels are adaptable for precision cutting, milling, grooving and facing all types of hard, brittle materials such as glass, quartz, steatite, ceramics, porcelain, tile and vitreous materials.

Bonding process rigidly anchors crushed diamond particles in periphery of cutting wheel. Wheels are not suitable for cutting metal. Adequate coolant must be used during cutting operations and should be selected for material being cut. Surface speeds vary from 2000 to 4000 surface feet per minute. Made by Felker Mfg. Co., 1125 Border Ave., Torrance, Calif.

▲ Mention Item NED-3555 when writing ▲

Choose Your Own



OUTPUT SPEED
with SACO
Speed Reducers

● Make full use of your standard motors. Saco Speed Reducers, with their wide range of output speeds, will allow standard full-speed motors to be used on a wide variety of driving jobs.

Saco Reducers attain first reduction through sheaves and V-belts. Second reduction is made through steel helical gears. A change of only a sheave produces a change in output speed. Write us for complete information.

STEPHENS-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · Car Pullers · Winches · SealMaster Ball Bearings · ChangeMaster Variable Speed Reducers · Saco Speed Reducers

.: RIDGEWAY AVE., AURORA, ILL.

▲ Mention Item NED-3556 when writing ▲

Sidewall type for capacities to 50 gpm and heads to 20 ft.

COOLANT PUMPS

Ingersoll-Rand centrifugal coolant pumps are reliable and trouble-free in operation. There is a size to meet any pumping requirement. A wide variety of liquid can be pumped even though it contains grit and dirt. Ask the Ingersoll-Rand Engineer for complete details.

Immersion type for capacities to 150 gpm and heads to 125 ft.

Ingersoll-Rand
CAMERON PUMP DIVISION
11 Broadway, New York, N. Y.

9-252

Horizontal type for capacities to 60 gpm and heads to 25 ft.

Sidewall type for capacities to 60 gpm and heads to 25 ft.
(Left) standard unit, (Right) low-submergence unit.

▲ Mention Item NED-3557 when writing ▲

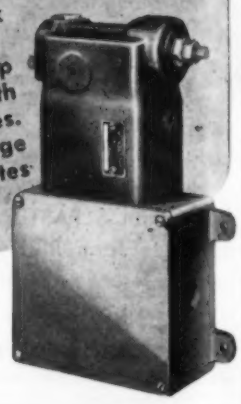
VICKERS PRESSURE SWITCHES for Oil Hydraulic Machinery

Compact—Readily Adjustable—Sensitive

The Vickers Pressure Switch is exceptionally sturdy—built for continuous service and rapid operation. Yet it is sensitive, accurately responsive, and readily adjustable. Contacts are quick make and break wiping type.

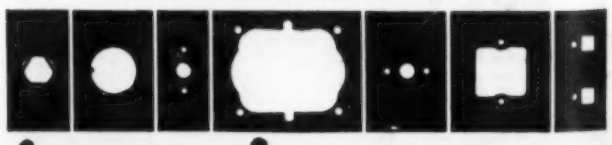
Available for pressures up to 3,000 p.s.i.—for use with oils of various viscosities. An automatic pressure surge damping device eliminates chattering.

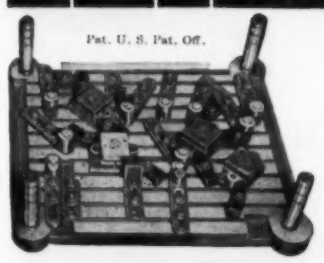
Write for details.



VICKERS *Incorporated*
1456 Oakman Blvd. • DETROIT, MICHIGAN

▲ Mention Item NED-3558 when writing ▲





WHISTLER ADJUSTABLE DIES

Precision Perforating and Notching
READY FOR PRODUCTION

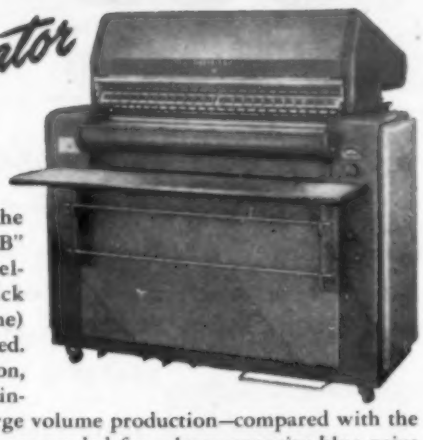
Multiply the production of your presses. More holes in given area—reduces "down" time—years of use in different pattern arrangements—complete interchangeability of parts—no special tools—in all standard sizes from 1/32". Whistler dies, tools and production machinery are used the world over.

Every Production Executive should have this Catalog. Write:

S. B. WHISTLER & SONS, Inc.
752-756 MILITARY ROAD BUFFALO, N. Y.

▲ Mention Item NED-3559 when writing ▲

BIG VOLUME
with one operator



THIS machine—the Bruning "75—159-B"—exposes and develops Bruning Black and White (black line) Prints at high speed. Automatic in action, it requires only a single operator for large volume production—compared with the two or three operators needed for a large capacity blue print machine. The operator need do nothing more than feed unexposed BW paper and tracings at front of machine. After exposure, prints pass automatically to developing and drying section of the developer and are delivered dry and ready for use. The "159-B" Volumatic makes possible large quantity production of sheets cut to the exact size of tracings. Its cost is much lower than that of an ordinary continuous blue print machine. For full information, write Charles Bruning Company, Inc., 4700 Montrose Avenue, Chicago, Illinois.

2185-298

BRUNING SINCE 1897

NEW YORK · CHICAGO · LOS ANGELES

Branches in 14 Principal Cities • Everything For The Engineer And Draftsman

▲ Mention Item NED-3560 when writing ▲

• Industrial production depends on the free, easy movement of raw materials and finished products. In many operations, that means wheels—substantial, dependable wheels that really "keep things rolling"—smoothly.

You'll find that there's an EWC Wheel for virtually every Industrial need—either to fit old axles or furnished with new axles and roller bearings. These wheels are properly engineered to speed handling — assure safety — save power.

Write Dept. N for Literature, Prices, and Suggestions

EWC WHEELS

Electric Wheel Co., Quincy, Ill.

▲ Mention Item NED-3561 when writing ▲

▲ Mention Item NED-3562 when writing ▲

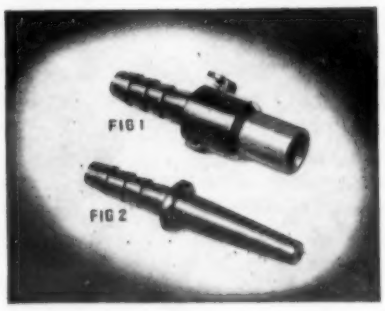
MAGNESIUM DUST CONTROL

Developed for safety in burring, filing and flexible shaft grinding of magnesium, type N Roto-Clone bench has semi-enclosed bench assembly with down draft ventilation through wood grilles. It is furnished complete with tool shelf, fluorescent lights and partitions between stations. Small individual units can be located directly in back of magnesium grinding stands if desired. Inlets are placed so that exhaust ducts are short and run directly into collector.

All ledges or recesses where damp magnesium dust could be deposited are eliminated. Dust is precipitated and stored under water. Any hydrogen resulting from reaction of magnesium and water is automatically vented. Benches are furnished single with one to three work stations or double arrangement with as many as six stations. Made by Dust Control Div., American Air Filter Co., 262 Central Ave., Louisville, Ky.

▲ Mention Item NED-3563 when writing ▲

PLASTIC NOZZLES

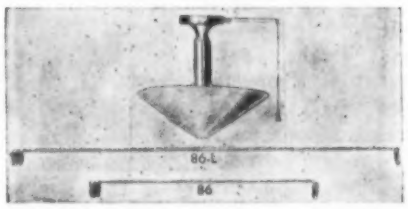


Replacing critical metals in essential fire fighting equipment of industrial plants, plastic nozzles are strong, durable and light. They are corrosion-proof, non-denting and highly resistant to acid and alkalies, liquids and water, it is claimed.

Nozzles are available in two types. Figure 1 shows nozzle for two way or split stream to form spray when needed, as in fighting incendiary bombs. It can also be instantly operated for one way stream by depressing thumb spring. Fig. 2 shows one way, straight stream nozzle. Both types are furnished for standard hose sizes. Made by American Molded Products Co., 1768 N. Honore St., Chicago, Ill.

▲ Mention Item NED-3564 when writing ▲

LIGHT SWITCH EXTENSION



Preventing rubbing and wear of lamp cords against reflectors, shades and bowls, this Levolier extension arm fits over fixture switch lever. Nos. 86 and 86-L arms fit over Levolier model 41-B, 1010 and 1039 plastic shell switches. Pull cord is threaded through loop in end of arm and attached to chain on switch. Made by McGill Mfg. Co., 1250 N. Lafayette St., Valparaiso, Ind.

▲ Mention Item NED-3565 when writing ▲

ENLISTED? Some of the men who cleaned your office or plant have probably gone by now. But those plants having Spencer Vacuum Cleaning now use inexperienced men or women and continue the necessary standards of cleanliness at all times.

With mass production and its resulting dust and debris, cleaning is more necessary than ever—to clear the way for continuous production, to protect workers against dust and explosion and to keep the lighting conditions up to standard.

Lightweight fast working Spencer Swivel handle vacuum tools, with tremendous vacuum power and the fact that debris is easily removed from the vacuum machine, are three reasons why Spencer Vacuum is used extensively in industry.

Spencer Portable and Stationary Systems are also used to clean machinery and finished goods, reclaim metals and save materials such as sand, cinders, and sawdust. All explained in Bulletin No. 125. Ask for it.

243 N

SPENCER VACUUM CLEANING
HARTFORD
THE SPENCER TURBINE COMPANY, HARTFORD, CONN.

▲ Mention Item NED-3566 when writing ▲

ACCURACY to .0005" on a GORTON Circular Table

IMMEDIATE DELIVERY

Work requiring circular indexing or locating can be handled exceptionally fast on Gorton Circular Tables. Rigidly built for either tool room or production work. Table surface accurate within .0005", indexing to 5 minutes or less. Other plus-value features:

1—Simple, positive adjustment.
2—Adjustable graduated dial on worm wheel.
3—Worm threads hardened and ground.
4—Detachable worm permits hand turning of table.
5—Mechanism dust-proof, totally enclosed, running in oil.
6—All bearings hand-scraped or ground.
7—Centering hole to facilitate set-ups.

Three sizes will accommodate a wide range of work

Prices: 10" size, $205.70; 12", $216.70 and 15", $224.40.

WRITE FOR FREE ACCESSORIES CATALOG No. 1337-D

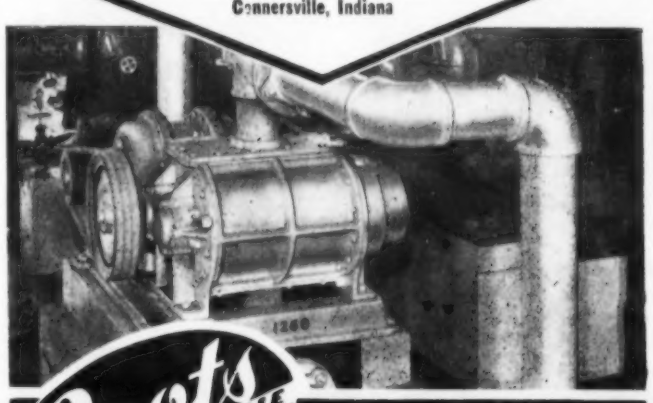
GEORGE GORTON MACHINE CO.
1103 13TH STREET, RACINE, WISCONSIN, U. S. A.

▲ Mention Item NED-3567 when writing ▲

PROTECTION
Against Inadequate Air Supply

suggests that good care be taken of your present blower equipment, although new blowers can be obtained under proper authorization. Careful lubrication, correct installation, and the right drive are fundamental. If a blower is quite old, new parts may be needed. Check your blower today. Information and suggestions available from factory or nearest branch office.

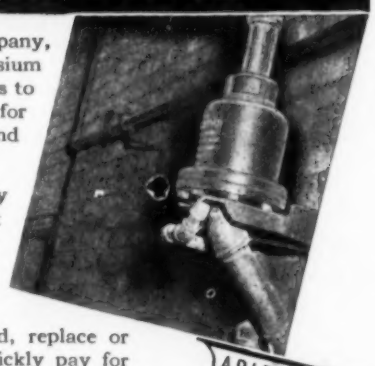
ROOTS-CONNERSVILLE BLOWER CORP.
307 Western Avenue
Connersville, Indiana



Roots CONNERSVILLE SINCE 1854 Rotary Positive BLOWERS

▲ Mention Item NED-3568 when writing ▲

Leading Magnesium Plant Uses Aridifiers to Stop Dirty Air Troubles



Howard Foundry Company, world's largest magnesium foundry, uses Aridifiers to provide clean, dry air for molding, grinding and finishing operations.

Aridifiers effectively remove moisture, dirt and fine scale from compressed air and gas lines by *centrifugal force*. Nothing to clean, become clogged, replace or require attention. Quickly pay for themselves in lowered maintenance costs. Send for bulletin.

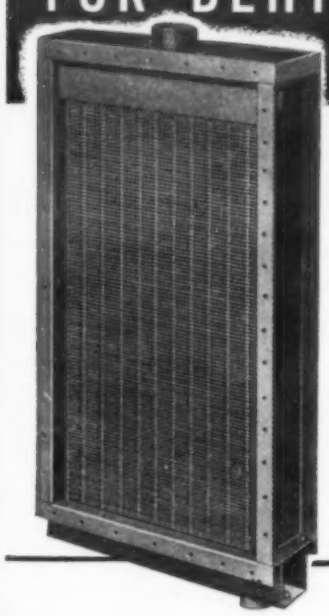
LOGAN ENGINEERING CO.
4904 Lawrence Avenue
Chicago, Ill.

Engineering Representatives in Principal Cities

The ARIDIFIER
Dries and Cleans Compressed Air

▲ Mention Item NED-3569 when writing ▲

modine coils FOR DEHYDRATING TUNNELS



Modine Steel Coils for dehydrating tunnels are specially treated for resistance to rust and corrosion. Fins, tubes and headers are dipped in molten lead-alloy to provide this protective coating necessary for processing work.
Fins are *permanently* bonded to tubes *with metal* — preventing corrosion from forming between primary and secondary surfaces, which in turn would destroy heat transfer from tube to fin.
Wide range of coil sizes and fin and tube combinations.

GET BULLETINS 342 and 342-A

Modine STEEL COILS

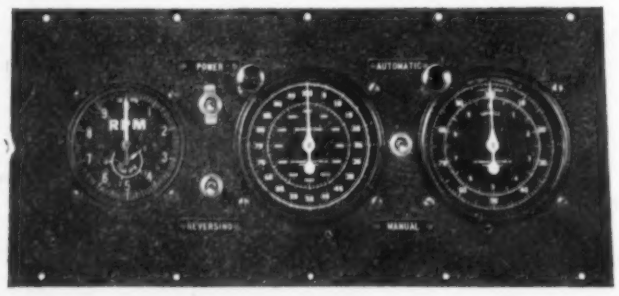
MODINE MANUFACTURING CO., 1702 RACINE ST., RACINE, WIS.

▲ Mention Item NED-3570 when writing ▲

THE STANDARD ELECTRIC TIME CO.

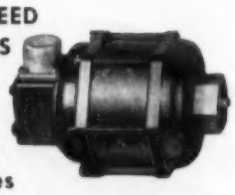
Announces a

NEW CHRONOTACHOMETER



TYPE SG (Self-Generating)

for ACCURATELY MEASURING SPEED and INTEGRATING REVOLUTIONS for Determination of
FUEL CONSUMPTION
OIL CIRCULATION
DEVELOPED HORSEPOWER
of Aircraft and other Engines



AN ELECTRIC DRIVE is the improved feature of this instrument: —

A 3-PHASE GENERATOR mounts conveniently to the engine tachometer takeoff and provides positive indication for either direction of rotation.

A 3-CONDUCTOR CABLE is furnished between the generator and two 3-PHASE RECEIVING MOTORS in the chronotachometer running in synchronism with the generator.

ONE RECEIVING MOTOR drives the tachometer unit.

ONE RECEIVING MOTOR drives the revolution counter unit.

BOTH TIMER AND REVOLUTION COUNTER are our standard clutch-controlled movements and operate by the same control circuit.

NO FLEXIBLE SHAFT is required.

THE TACHOMETER has a SCALE-LENGTH of 30.25" full scale and is a flight instrument manufactured by General Electric Co. (their No. DJ-13). Location of tachometer, revolution counter and timer movements is not restricted and since there is no mechanical connection between them, any one of the three may be mounted on a panel remote from the others.

ACCURACY IS:
TIMER to within .001 minutes per test run.
REVOLUTION COUNTER to within ½ revolution per test run.
TACHOMETER to within 10 RPM throughout the scale range.
Thus extreme accuracy of speed measurement may be obtained by prolonged integration of time and revolutions.

AUTOMATIC 1/10th minute integration (RAPID SPEED CHECK) is included on this and all other types of chronotachometers.

Address Dept. NED-8

THE STANDARD ELECTRIC TIME CO.
"Split-Second Measurement by Standard"
SPRINGFIELD, MASSACHUSETTS

▲ Mention Item NED-3571 when writing ▲

EXTRACTING TOOL

Stub ends of pipe, nipples, tubes, bolts and screws can be removed without damage to threads through use of heavy duty extractors. Forged of tool steel, tool has heavy square shank followed by sharply tapered, short, reverse thread ending in square reaming end. Powerful four-point grip is obtained by inserting tapered end into pipe, tube or drilled bolt and turning with wrench.

Sets are composed of 10 cadmium plated extractors which will fit pipe from ⅛ to 2 inches and bolts or screws from ⅜ to 3½ inches. They are packed in oak case with hinged cover. Made by **Reps Tool Co.**, 99 Wall St., New York City.

▲ Mention Item NED-3572 when writing ▲

END DUMP TYPE HOPPER

Mounted on heavy duty all steel casters, No. 4004 automatic end dump hopper is designed to fit any type of light or industrial fork truck. It may be built to specifications as to capacity and yardage content. When latch is released, load dumps automatically. Bucket returns and latches in position when it is reloaded. Hopper will ride in balanced position when empty.

This materials handling unit may be used for gravel, coal, metal stampings, small castings and all types of scrap and refuse. It is built of structural steel and heavy plate. Made by **Rose Mfg. Co.**, 12400 Strathmoor, Detroit, Mich.

▲ Mention Item NED-3573 when writing ▲

TOGGLE PLIERS

Designed for holding piping, tubes, rods and other cylindrical parts during manufacturing operations, toggle pliers No. 455 lock into position and hold securely at any point within their gripping range. They are easily and quickly released. Pliers illustrated will hold any cylindrical object from ½ to 1¼ inches outside diameter. For holding other sizes these cylindrical toggle pliers are bored and slotted to order, to fit user's requirements. Made by **Detroit Stamping Co.**, 360 Midland Ave., Detroit, Mich.

▲ Mention Item NED-3574 when writing ▲

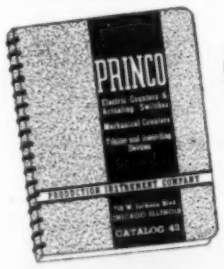
Wizard Electric Counters

Count anything from shadows to box cars—parts, cans, cases, bottles.

Current draw only 4 Watts — 600 counts per minute—continuous duty coils — all working parts enclosed.

May be located at any distance from actual source of count. Actuated by any suitable switch, relay, or photo-electric unit.

Built for heavy duty industrial service. Quick deliveries on high priority orders.



Counting Problems Solved!

Princo Mechanical and Electric Counters are made in types and sizes to meet widely varying requirements. Our extensive experience is available to users in applying Counters. For suggestions just tell us what you want to do.

Complete Catalog mailed promptly on request.

Production Instrument Company
702-16 W. JACKSON BLVD. · CHICAGO, ILL.
Manufacturers of Counting, Timing and Recording Devices

▲ Mention Item NED-3575 when writing ▲

WOOD BOXES *Metal Bound*

Built of hardwood lumber, completely metal bound, all welded construction, no bolts used. All metal parts painted gray, wood left natural. Four-way lift truck entrance (side or ends).

IMPORTANT: When ordering give underneath clearance required for lift truck. To avoid mistakes always order by "Item" number.

Immediate shipment on orders with AA group priority.

STOCKED IN TWO SIZES

Item NS-249A measures 34" wide, 42" long, 20" deep overall. Weight approx. 225 lbs.
$26.50 *f.o.b. Detroit*

Item NS-249B measures 34" wide, 48" long, 24" deep overall. Weight approx. 300 lbs.
$29.50 *f.o.b. Detroit*

Palmer-Shile Co.
7116 West Jefferson Ave., DETROIT 17, MICHIGAN

▲ Mention Item NED-3576 when writing ▲

HOW TO *Slash* BADGE COSTS...

Most plants today (and probably yours, too) are confronted with a high ratio of employee turnover. Our tamper-proof re-usable photo badges will drastically reduce your badge costs. They can be opened and closed—only with a tool we furnish—for changing photos. The units save valuable time by permitting quick change of colored paper inserts when shifting employees to different departments. They eliminate needless waste of badge materials.

Re-usable badges will save, within a few months, the entire cost of a new badge installation.

SOLID METAL BADGES, without photos, also available.

Write, telegraph or telephone for helpful suggestions, samples, and quotations in quantities you specify.

TOOL CHECKS . . . Made from tough fibre . . . any size, numbered and lettered to your specifications.

AMERICAN EMBLEM COMPANY, INC.
LIBERTY BOULEVARD · UTICA, N. Y.
Sales Offices . . . New York · Philadelphia · Chicago · Detroit
St. Louis · Washington, D. C. · Representatives in Major Cities

▲ Mention Item NED-3577 when writing ▲

▲ Mention Item NED-3578 when writing ▲

DON'T MUFF Fastening Jobs In Masonry and Concrete

Fig. 970 Fig. 980

USE **PAINE** Malleable Shields

- Easy to seat without a setting tool
- Expand uniformly assuring firm grip when tightened
- Vibration and jiggle resistant
- Meet every WAR PRODUCTION requirement

Fig. 970—Single Machine Bolt Shield (also Double Type Fig. 990) will handle all standard machine bolts.

Fig. 980—Malleable Lag Screw Shield will handle all standard flat or square head lag screws.

Ask your supplier and Write for New Catalog
THE PAINE CO.
2977 Carroll Ave.,
Chicago, Illinois
Offices in Principal Cities

★ PAINE ★ FASTENING and HANGING DEVICES

▲ Mention Item NED-3579 when writing ▲

Photo Courtesy Bell Aircraft Corporation

FINISHING dies is a painstaking job calling for specialized skill. The rough casting must be scraped and then sanded and finished with coated abrasives to give required fidelity to specified contours and to produce smooth surfaces for perfect stamping operations.

This process is speeded by using Aloxite Brand Aluminum Oxide Coated Abrasives in various forms specially adapted to different contours. Abrasive discs, "NOLAP" bands and cloth sheets are used as the operation requires. Net result: speed-up of the die preparation process and saving man-hours for tooling operations.

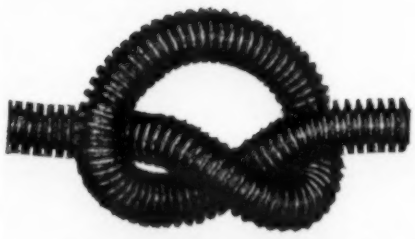
CARBORUNDUM ABRASIVE PRODUCTS

Sales Offices and Warehouses in New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, Pittsburgh, Cincinnati, Grand Rapids
(Carborundum and Aloxite are registered trade-marks of and indicate manufacture by The Carborundum Company)

THE CARBORUNDUM COMPANY, NIAGARA FALLS, N. Y.

▲ Mention Item NED-3580 when writing ▲

Sharp Bends in "Tight" Spots Are No Problem, When You Use ECLIPSE



. . . the flexible, all-metal hose for steam, air, acids, oil, gases, chemicals, hydraulic, vacuum, etc. Light weight, durable, safe. Withstands high pressures and temperatures.

Write for Information. Please Describe Installation Details

ECLIPSE AVIATION
SEAMLESS FLEXIBLE METAL HOSE

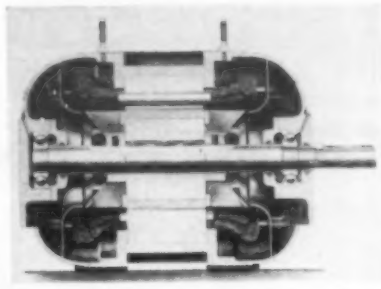
Manufactured and Sold by

THE INVISIBLE CREW
Precision Equipment by Bendix
AVIATION CORPORATION

Philadelphia Division:
4710 WISSAHICKON AVENUE, PHILADELPHIA, PA., U. S. A.

▲ Mention Item NED-3581 when writing ▲

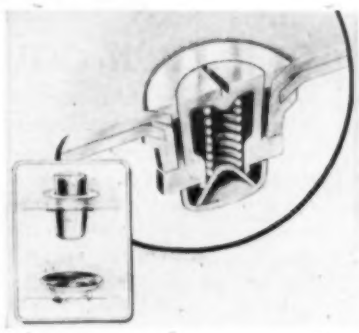
INDUCTION MOTOR



Designed to afford maximum protection against chips, filings and dripping or splashing liquids which are destructive to open type motors, type RS dripproof induction motor is built in sizes from ½ to 75 horsepower, two or three phase, alternating current. It is adaptable to machine tool and production equipment, canneries, paper mills, packing houses and other locations where totally enclosed motor is not especially needed. Motors are equipped with heavy duty ball bearings, heat treated ground shafts, dynamically balanced rotors and heavy rugged frames. Phase insulation is heavy varnished duck. Made by **Lima Electric Motor Co.**, 2001 Findlay Rd., Lima, O.

▲ Mention Item NED-3582 when writing ▲

AIRCRAFT FASTENER

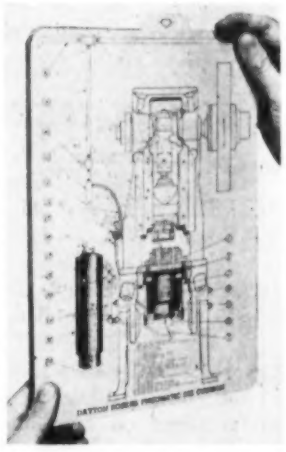


Fastening of aircraft cowling, inspection plates, protective panels and similar uses are facilitated with this Simlok fastener which features helical type spring to give long spring travel. Design reduces vibration and assures rigid, tight fit. In tension, load is not carried by spring, but by hardened steel lugs.

Stud is self-ejecting when unlocked so as to be readily recognizable by mechanic. Stud part is locked semi-permanently in outer sheet so that it cannot become lost or mislaid. All wearing parts are heat treated and assembly is cadmium plated for corrosion resistance. Made by **Simmons Machine Tool Corp.**, 1000 N. Broadway, Albany, N. Y.

▲ Mention Item NED-3583 when writing ▲

DIE CUSHION MODEL

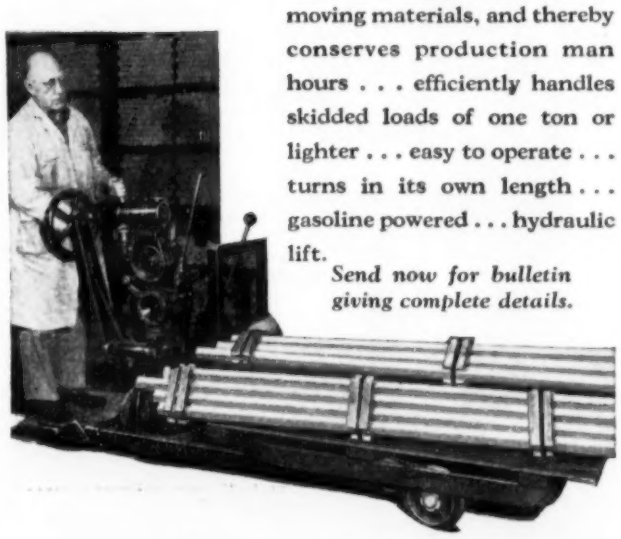


Details of pneumatic die cushion operation as applied to average punch presses are shown in this cutout working model. Made of laminated cardboard, model explains working principles. How blank is automatically held in tension and how press tool produces smooth shell throughout work cycle of draw die are shown.

Use of single action press in place of double action press is explained. Details are also presented as to basic working parts of standard die cushions. Available free from **Dayton Rogers Mfg. Co.**, 2832 Thirteenth Ave. S., Minneapolis, Minn.

▲ Mention Item NED-3584 when writing ▲

Man Hours Saved



The Truck-Man saves time in moving materials, and thereby conserves production man hours . . . efficiently handles skidded loads of one ton or lighter . . . easy to operate . . . turns in its own length . . . gasoline powered . . . hydraulic lift.

Send now for bulletin giving complete details.

Priced at but $600.00 F.O.B. Jackson, Michigan

truck-man
a product of
YARD-MAN, INC.
1414 WEST GANSON
JACKSON · MICHIGAN

▲ Mention Item NED-3585 when writing ▲

PRESSURE SWITCH for Marine Service

dripproof and watertight

CLASS 9013

TYPES AW & AW1

The Class 9013 Types AW and AW1 pressure switches are built for marine service to conform with American Bureau of Shipping Regulations for dripproof and watertight switches. The switches differ from standard in the use of a special sheet steel enclosure with drip hood and gasket seal. Type AW is standard. Type AW1 includes a release valve as illustrated. The switches may be adjusted in a variety of settings up to 225 lbs. maximum.

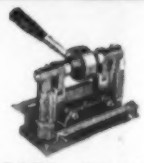
ELECTRICAL RATINGS

	Voltage	Single Phase A.C.	Polyphase A.C.	D. C.
Double Pole Types AW & AW1	110V.	2 H.P.	3 H.P.	1 H.P.
	220V.	3 H.P.	5 H.P.	1 H.P.
	440-550V.		5 H.P.	.....
	32V.			½ H.P.

REGULATOR DIVISION
SQUARE D COMPANY
DETROIT • MICHIGAN

▲ Mention Item NED-3586 when writing ▲

GIRL MAKES PARTS



SHEARS—DI-ACRO shear squares and sizes material, cuts strips, slits, notches.

BRAKES—DI-ACRO Brake forms non-stock angles, channels or "Vees".

BENDERS — DI-Acro Bender bends angle, channel, rod, tubing, wire, moulding, strip stock, etc., 2 sizes. Capacity up to ½" cold rolled steel bar.

NO DIES — NO DELAYS

"Beat The Promise" on delivery this new way: Use The DI-ACRO System of "Metal Duplicating Without Dies" — and have parts finished before dies could hardly be started.

DI-ACRO Machines — Shears, Brakes, Benders — are precision-built STANDARDIZED units so designed you can readily convert them into highly SPECIALIZED productive machines suited to your own particular needs. You may adjust, alter or remove any of the original contact surfaces, attach operating clamps, guides and gauges, or quickly set up your own forming surfaces or conversions. Either right or left hand operation and mounting of each unit. The result is a practically unlimited adaptability for a great variety of DIE-LESS DUPLICATING. Write for catalog—"Metal Duplicating Without Dies".

O'NEIL-IRWIN DI-ACRO PRECISION MACHINES MFG. CO.
354 Eighth Avenue South • MINNEAPOLIS 15, MINNESOTA

▲ Mention Item NED-3587 when writing ▲

VITAL! Release Larger, Expensive Machines for Other Work

Hammond ABRASIVE FINISHING MACHINES

Essential To Your Production Department

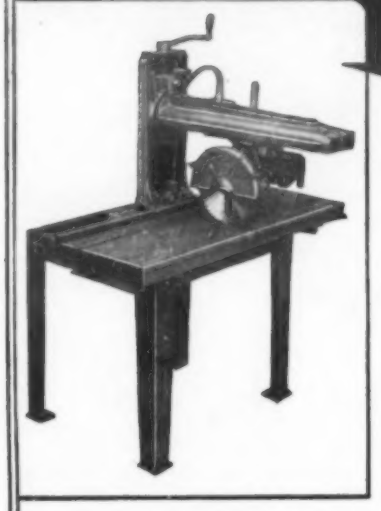
Many operations requiring costly set-up time on expensive machines are now handled successfully on Hammond 600 Dri-N-Wet Abrasive Belt Grinders. Many jobs are done by hand, easier, faster, more economically, and you obtain the accuracy desired. Investigate the possibilities today — write for bulletin.

HAMMOND Carbide, Tool and Snagging Grinders • Abrasive Belt Surfacers • Automatic and OD Cylindrical Finishing Machines Polishing Lathes

Hammond Machinery Builders INC.
KALAMAZOO, MICHIGAN
1623 DOUGLAS AVENUE
EASTERN BRANCH 71 WEST 23RD STREET, NEW YORK 10, N. Y.

▲ Mention Item NED-3588 when writing ▲

WALLACE No. 1 RADIAL SAW



ALL-PURPOSE SAW FOR WOOD AND METAL

For cut-off, miter and rip work on Wood, Duralumin, Brass, Bronze, Steel, Glass and other refractory materials.

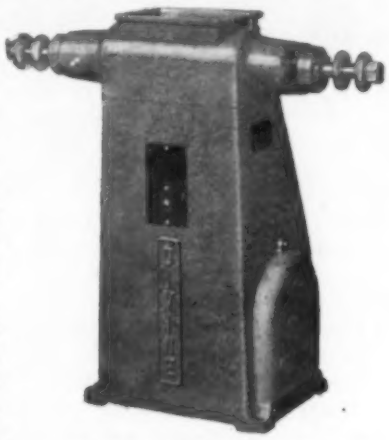
In the crating department, for plant maintenance work, for production sawing and cutting operations on wood, duralumin, metals, etc. the Wallace No. 1 Radial Saw is unexcelled. Material lays flat on table,—motor is moved back and forth in arm for cutting. Arm, column and motor all rotate 360° and can be set at any angle position for cutting. Motors to 2 H.P. Used with saw blades or 1/32" thick abrasive wheels. Write for bulletins on this cost-saving machine *today*.

J. D. WALLACE & COMPANY
145 S. California Ave. Chicago, Illinois

▲ Mention Item NED-3590 when writing ▲

POLISHING LATHE

Especially suited to small parts finishing, polishing, buffing and burring operations, model VJ lathe is available in 1 to 3 horsepower sizes and with spindle speed up to 3850 revolutions per minute. Features include sealed bearings, NEMA standard ball bearing motor enclosed in base, straight line front, large tray, spindle lock and square spindle threads. One end of spindle is tapped for standard taper points.

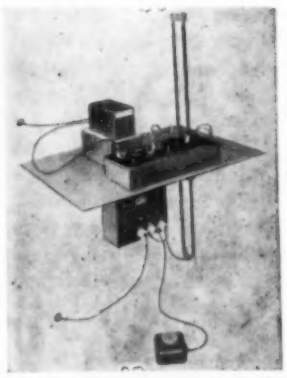


Two-speed drive is also available, as well as start-stop brake control of motor. Ample room is provided between wheels and base. Made by Divine Brothers Co., 104 Whitesboro St., Utica, N. Y.

▲ Mention Item NED-3598 when writing ▲

COIL-TURN COUNTER

Adaptable for laboratory or factory use in determining exact number of turns in wound electric coils, this improved coil-turn counter is compact in design and incorporates magnetizing current control box which simplifies installation. Unit is capable of checking or determining effective turns of coils ranging from 1 to 11,110 turns at rate of from 80 to 100 coils of like specifications per hour.



Counter consists of portable light-beam galvanometer, two yoked test rods, galvanometer control panel and foot-operated switch. Accuracy of device is one turn in one thousand for coils having air cores at least 5/8 inch in diameter, outside diameter of 8 inches and less, coil build-up to 2 5/8 and up to 6 inches in height. Made by General Electric Co., Schenectady, N. Y.

▲ Mention Item NED-3594 when writing ▲

BLACK METAL FINISHES

Supplementing regular Jetal process of immersion black finish for steel, Oxidine finishes offer similar results for cast iron, brass, copper and zinc products. Oxidine B has good adherence on metals such as brass, copper and electroplated copper or brass. Parts are dipped in water carrying added salts which is heated to 200 degrees Fahr. Immersion of 3 to 15 minutes is required.

For zinc, Oxidine Z offers durable, smooth adherent black which is also adaptable for use on die castings and electroplated zinc. Oxidine CI provides dense black finish at low temperatures on cast iron. Salts and processes developed by Alrose Chemical Co., 180 Mill St., Cranston, R. I.

▲ Mention Item NED-3595 when writing ▲

You Can't Get Steel . . . Use NYWOOD

the modern substitute in **LOCKERS, CABINETS,** Tool Stands, Shelving, etc.

NYWOOD LOCKERS

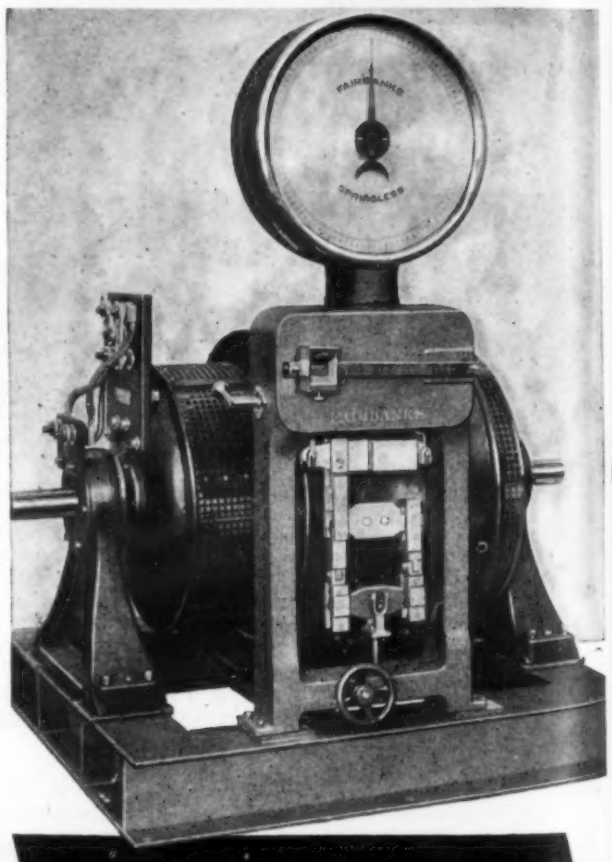
NYWOOD CABINET

Complete series of needed models in standard sizes and sectionizing. Built of sturdy plywood, made termite-proof, resistant to fire and protected against salt water, weather and odors through immersion in special solution. Tough lacquer exterior in office green. Interiors, tops and bottoms neutral tone finish resulting from processing solution. Easy assembly. Very attractive prices.

SEND FOR LITERATURE

NYCE METAL PRODUCTS COMPANY
4308 North Broad Street
PHILADELPHIA, PA.
Phone MIChigan 6463

▲ Mention Item NED-3597 when writing ▲



Fairbanks Scales for DYNAMOMETERS

Direct reading dials register any torque from 20 hp. up

Fairbanks Dial Scales for this service are built on the same time-tested principles that have given Fairbanks Scales their world-wide reputation for *long life* and *sustained* accuracy—even under the most severe service conditions. There are no springs—no delicate parts. Pivots and bearings are hardened tool steel.

Fairbanks, Morse & Company, 600 South Michigan Avenue, Chicago.

LINKS MADE TO ORDER

FAIRBANKS-MORSE Scales

DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · SCALES · WATER SYSTEMS · FARM EQUIPMENT · STOKERS · AIR CONDITIONERS · RAILROAD EQUIPMENT

▲ Mention Item NED-3598 when writing ▲

WAGNER Crane Brake MAINTENANCE

No matter what your crane bridge brake requirements may be, you can look to Wagner for complete hydraulically actuated bridge braking systems for either new cranes or for conversion from mechanical brakes.

Wagner hydraulically actuated bridge braking systems are available in two types—type H for inside cranes, and type HM for outside cranes where automatic parking attachment is necessary. Both systems come to you ready to install, and include brake assembly, brake wheel, master cylinder, wheel cylinder, tubing, flexible hose, brake fluid and all fittings.

BRAKE LINING..

Wagner brake lining is preformed in blocks to fit all makes and sizes of crane brakes.

Send for **BULLETIN IU-20**

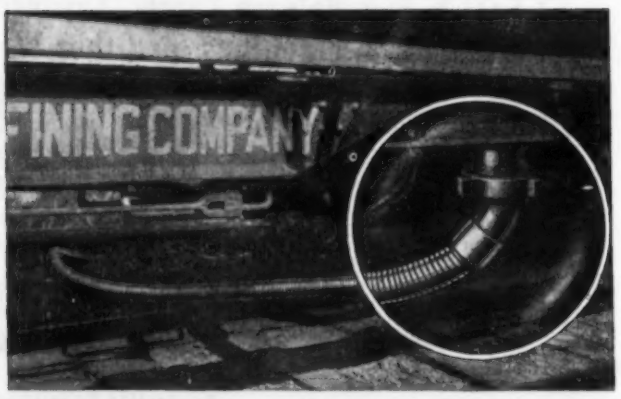
FIELD ENGINEERING SERVICE

Wagner's 29 branch offices are manned by trained field engineers competent to solve your braking problems. They will gladly consult with you and make recommendations.

143-3

Wagner Electric Corporation
ESTABLISHED 1891
6477 Plymouth Avenue, St. Louis, Mo., U. S. A.
ELECTRICAL AND AUTOMOTIVE PRODUCTS

▲ Mention Item NED-3591 when writing ▲



Unload Volatiles, Oils and Liquids with PENFLEX Safety

STANDARD PENFLEX, 4-wall Interlocking Flexible Metal Hose wound in a continuous helix of heavy-gauge galvanized steel, provides added safety from car to storage.

Four metal walls protect against puncture; four metal walls interlock to give greater resistance to crushing; four metal walls reduce fire hazard.

Resistance to attack from a wide range of liquids; freedom from kinks; inherent safety against static electricity; and flexibility to make bends easily are other outstanding advantages described in Bulletin 55.

PENNSYLVANIA FLEXIBLE METALLIC TUBING CO.
7232 Powers Lane, Philadelphia, Pa.
ESTABLISHED 1902

▲ Mention Item NED-3592 when writing ▲

Now! THEY'RE MADE OF WOOD

INCREASED PRODUCTION —PROMPT DELIVERY

● Kewaunee Automatic Adjustable Stools and Chairs, formerly made of metal, are now being produced in ALL WOOD. Redesigned to retain substantially the same adjusting principle. Sturdily built of selected hard wood to embody unusual strength and endurance. They're "ton-tested."

Three standard height ranges —18" to 22", 22" to 28", and 28" to 36". Other heights obtainable. Shaped plywood seat, adjustable back-rest and foot-rest.

Kewaunee AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

A new standard of efficiency in industrial seating. Any man or woman, tall or short, light or heavy, can *instantly* adjust a Kewaunee AA Chair or Stool to exactly the height desired. Just lift the seat—that's all. Right posture, correct height of seat from floor, insure greater comfort and efficiency, better work, increased production, fewer rejects.

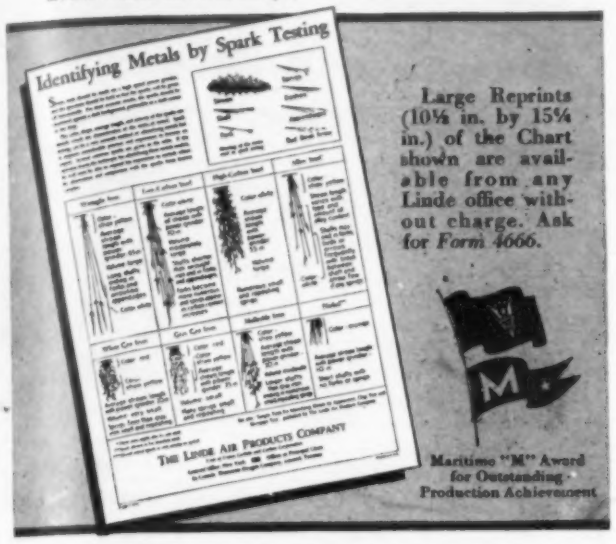
Write for circular and full details.

KEWAUNEE MFG. CO., ADRIAN, MICH.

▲ Mention Item NED-3596 when writing ▲

SEND FOR THIS CHART

It will help you properly to classify and segregate your scrap metal so as to obtain higher prices and also to avoid waste of vital alloys.



THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
30 East 42nd St. UCC New York, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

▲ Mention Item NED-3599 when writing ▲

THICK BODY DI-MET RIMLOCK DIAMOND ABRASIVE WHEELS

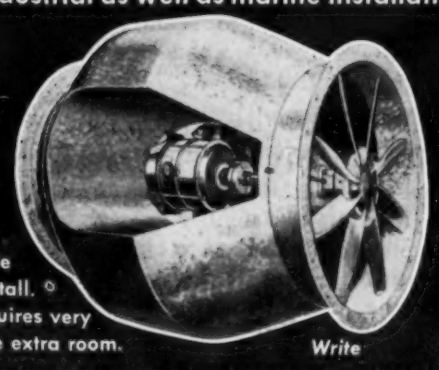
A HEAVY body series of DI-MET Rimlock diamond abrasive wheels is now available in sizes of from 1" to 6" diameters and in thicknesses of 1/16" to 1/2". Increased thicknesses provide extra rigidity for precision milling in all hard, non-metallic materials and enable grooves up to 1/2" to be cut in a single pass of the wheel. Write for more information for using this new, thick body DI-MET wheel on your cutting application.

FELKER MANUFACTURING COMPANY
1124 BORDER AVENUE, TORRANCE, CALIFORNIA
MANUFACTURERS OF DIAMOND ABRASIVE WHEELS

▲ Mention Item NED-3600 when writing ▲

REMOVE HIGH TEMPERATURE AND CORROSIVE FUMES WITH
International DUCT BOOSTERS

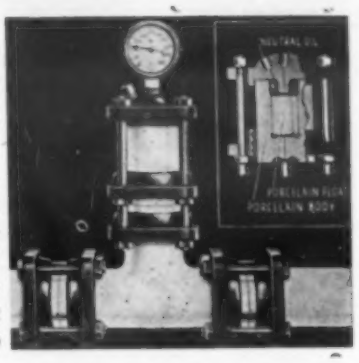
Can be installed right in the duct, in any position—horizontal or vertical. Requires no platform for support. Eliminates 90° change in gas direction. Saves burned out motors in industrial as well as marine installations.



Simple to install. Requires very little extra room. Write
INTERNATIONAL ENGINEERING, INC.
DAYTON, OHIO

▲ Mention Item NED-3601 when writing ▲

GAGE PROTECTOR



Permitting use of standard, direct-acting metallic pressure gages in lines carrying corrosive liquids. Lapp chemical porcelain snubber type gage protector is designed to fit porcelain pipe of 1-inch inside diameter. Protector consists of chamber of chemical porcelain enclosing porcelain float ground and lapped to smooth precision fit.

Gage is mounted in cap in standard ¼-inch pipe tap. Cavity between float and gage is filled with neutral oil. Pressure from line or vessel below is transmitted through float to oil above. Danger of seepage past float is minimized by tight fit and fact that pressures are equal above and below float. Made by Lapp Insulator Co., Chemical Porcelain Div., 945 Margaret St., Le Roy, N. Y.

▲ Mention Item NED-3602 when writing ▲

INDUSTRIAL GLOVES

Of improved design, steel reinforced gauntlets are intended for heavy duty handling. Though heavily reinforced, glove is flexible because grain leather is used. Steel ribbons, placed diagonally, assure protection against cutting edges of materials handled.

Entire palm extending up to first joint of all fingers and well around to back of forefinger is reinforced with extra piece of leather. Thumb is patched and strapped for extra service. All closing seams are stitched with steel thread. Gloves may be had as pairs, all rights, all lefts or any combination required. Made by Industrial Gloves Co., 555 Garfield Blvd., Danville, Ill.

▲ Mention Item NED-3603 when writing ▲

PIPE ALIGNMENT GUIDE

Redesigned to save critical metal and machining operations, Model G pipe alignment guide may be used on steam, hot water, fuel oil and other pipe lines adjacent to expansion joints to insure true alignment of pipes in service. It consists of semi-steel spider and guiding cylinder, and allows for pipe movement of 8 inches. Easily installed, device has four fingers of spider which ride on inside of cylinder. Made by American District Steam Co., North Tonawanda, N. Y.

▲ Mention Item NED-3604 when writing ▲

PRECISION MADE

to Army, Navy and Air Corps specifications. Wide range of types and sizes of screws, nuts, washers and associated fasteners—all metals, heads, threads, points and finishes.

Thousands of standards in stock. Specials to your order. Samples on request. Send samples or blueprints; prompt quotations.

Fastest delivery on Machine Screws, Drilled Screws, Aluminum Washers, Cotter Pins, Lock Washers.

Ask for 96-page Catalog

MANUFACTURERS SCREW PRODUCTS
218 West Hubbard St., Chicago, Ill.

▲ Mention Item NED-3605 when writing ▲

Aviation Wings its Way to Cleaner, Lighter Wings with TORNADO PORTABLE INDUSTRIAL VACUUM CLEANER

CLEANING airplane wings, as illustrated, is one of the many cleaning jobs done in war industries with the TORNADO Industrial Vacuum Cleaner. Does a variety of clean-ups, faster, better, with its 1 h.p. G.E. motor and powerful suction, 49" waterlift, 175 c.f.m. and 12-gallon capacity tank.

Still the most portable and powerful unit of its kind, it is a necessity for protecting valuable motors and machinery against the ravages of dust by cleaning up dust and dirt at their source—floors, walls, pipes, ceilings, etc.

Write for details and FREE TRIAL Offer

TAKE THE DUST OUT OF INDUSTRY

BREUER ELECTRIC MFG. CO.
5106 N. RAVENSWOOD AVE., CHICAGO, ILL.
with BREUER'S BALL BEARING
TORNADO
PORTABLE INDUSTRIAL VACUUM CLEANER

▲ Mention Item NED-3606 when writing ▲

How to make your SLEEVE TYPE BEARINGS *last longer*

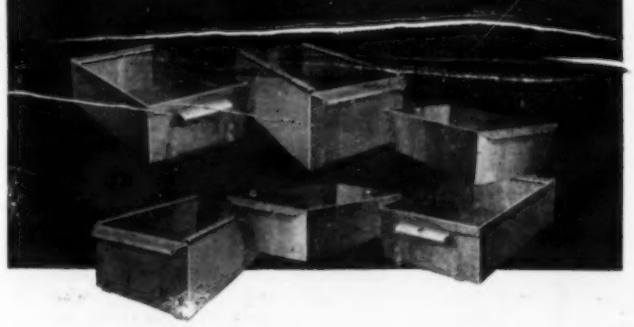
Frequent Lubrication

Lubrication is the life blood of every motive unit. Most bearing failures can be traced either to faulty or neglected lubrication. Why not start a systematic schedule of lubrication for every bearing in your plant? It will pay you big dividends in greater performance, longer bearing life. Be sure the lubricant is the right grade and that it is clean.

JOHNSON SLEEVE BEARING — BRONZE HEADQUARTERS
580 S. MILL STREET NEW CASTLE, PA

▲ Mention Item NED-3607 when writing ▲

RIGHT IN ANY WAR PLANT PRODUCTION LINE



● Lyon Material Handling Containers reduce time and cost of transporting small parts . . . speed handling at bench or machine . . . reduce personal injury and fire hazards. They combine the advantages of strength and light weight . . . save floor space . . . reduce damage to materials handled. Mail coupon for catalog showing other Lyon Productions and Storage Equipment engineered to help speed war goods output.

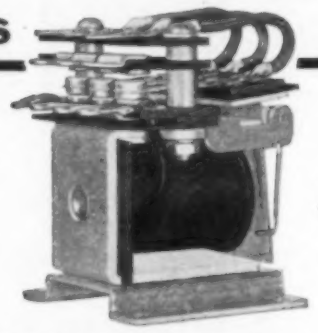
LYON METAL PRODUCTS, INCORPORATED
2207 Madison Avenue, Aurora, Illinois
Send details on Lyon Materials Handling Containers and Catalogs showing other Lyon Production and Storage Equipment.
Name
Address
City State

LYON METAL PRODUCTS, INCORPORATED AURORA ILLINOIS
BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

▲ Mention Item NED-3608 when writing ▲

Aircraft RELAYS by GUARDIAN

Series 345



Fits into Compact Spaces

•

Resists Vibration

Size:
2⅜" H.
2 1/32" L.
1 11/16" W.
Weight:
6½ oz.

★ Contact combinations range from single pole single throw, up to three pole double throw. This feature, combined with the large coil winding area, permits the Series 345 Relay to operate with highest efficiency in smaller spaces. Coils available for resistances ranging from .01 ohm to 15,000 ohms. Contacts resist acceleration and vibrations of over 10 times gravity in all positions. Moisture-proofed.

Bulletin No. 345 gives further details

WRITE

GUARDIAN ELECTRIC
1626 WEST WALNUT STREET CHICAGO, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN WAR INDUSTRY

▲ Mention Item NED-3609 when writing ▲

OVER 1000 USES FOR THIS NEW, BETTER WRAPPING MATERIAL

Victory Wrap

STRONG — takes lots of abuse. FLEXIBLE — for odd shaped articles. WATERPROOF — treated for all-weather protection. AIR RESISTANT — excellent for ocean shipment.

FREE Sample Book

Send today for sample book of Victory Wrap.

CUSTOM BUILT AND SPECIALTY PAPERS CENTRALINE

CENTRAL PAPER COMPANY INC.
2402 LAKESHORE DRIVE
MUSKEGON, MICHIGAN

▲ Mention Item NED-3610 when writing ▲

Prompt Deliveries of

ACCURATE Sheet Metal Work

SPARE PART BOXES

under Government Specifications

Carefully and rapidly produced in Stackbin's modern plant, Stackbin-made spare parts boxes are meeting Navy requirements and are in use on Navy ships.

Stackbin offers you unusual facilities to fabricate these boxes and other sheet metal products

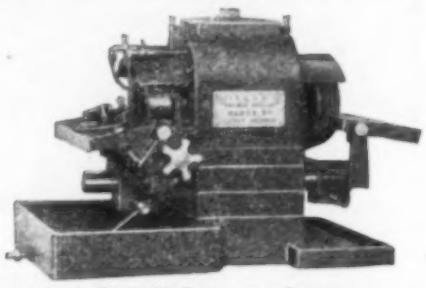
Behind these special products stand the designing experience and production facilities of a leading maker of parts and materials handling equipment. You can take advantage of their knowledge of sheet metal fabrication. Write Stackbin Corp., 71 Troy St., Providence, R. I., to find out what they can do for you.

STACKBIN SYSTEM
"Stacked and Still Accessible"
STACKBIN CORP., Providence, R. I.

▲ Mention Item NED-3611 when writing ▲

BENCH TYPE TOOL GRINDER

Rapid wet or dry grinding of tungsten carbide tipped tools and other types of tool bits ranging up to maximum of 1¼ inches square or equal cross section is possible on this model 50 bench grinder. Fully enclosed 110-volt single phase or 220/440 - volt three phase ball bearing motor drives 6-inch vitrified silicon carbide and diamond wheels at surface speed of approximately 5000 feet per minute.

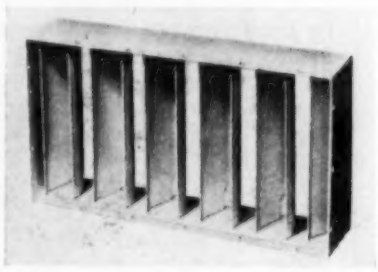


Adjustable tool rest table is graduated for setting from 15 degrees above to 30 degrees below horizontal. Coolant reservoir is cast into upper part of machine and coolant is fed by gravity. Made by **Willey's Carbide Tool Co.**, 1340 W. Vernor Highway, Detroit 16, Mich.

▲ Mention Item NED-3612 when writing ▲

AIR CONTROL OUTLET

Providing noiseless, adjustable control of air volume, pressure and distribution across supply outlet, air control known as Volocitrol eliminates need for splitters, volume dampers and similar devices in balancing of air distribution systems. Frame is of 16-gage steel 2⅛ inches wide. Pivoted louvres are of 24-gage steel. Friction pins on each louvre allow it to be set by hand. Positions are maintained when once set. Fireproofed felt edging strip to fit between frame of control and duct is furnished as standard. Made by **Barber-Colman Co.**, 230 Loomis St., Rockford, Ill.



▲ Mention Item NED-3613 when writing ▲

SAFETY APRON

Originally designed for use in lumber mills, Steel-Grip Kick-Back safety apron is now employed in shipyards and industrial plants for grinding jobs and as protection when using automatic hammers, drills and similar tools. Apron features use of bowed piece of fiber underneath heavy canvas. Back of apron next to operator's body is quilted for comfortable fit. Made by **Industrial Gloves Co.**, 555 Garfield Blvd., Danville, Ill.

▲ Mention Item NED-3614 when writing ▲

Free 72-PAGE BOOK OF VENTILATING INFORMATION

for Executives and Engineers

Invaluable in solving problems involving excess—

Heat
Moisture
Dust
Fumes

MAIL THIS COUPON!

PROPELLAIR, INC., Springfield, Ohio 10K

Please send the 72-page Propellair book of ventilating information.

Name..... *Position*.....

Firm Name.....

Address..... *City & State*.....

My ventilating problem involves:

☐ Heat ☐ Fumes ☐ Moisture ☐ Dust

▲ Mention Item NED-3615 when writing ▲

WELD FOR

Brig

In plane construction and countless other war industries, Brightboy saves time and operations in deburring, cleaning, finishing, polishing.

Brightboy's resilient rubber binder *cushions* the abrasive—degree of finish and polish is achieved by

BRIGHTBOY INDUSTRIAL DIVISION
WELDON ROBERTS RUBBER CO. Newark, N.

▲ Mention Item NED-3616 when writing ▲

If you are manufacturing ... rial, or anything vital to the ... the war effort, you can get ... Conveyers to handle that ma... as usual on your Mathews ...

MATHEWS CON...

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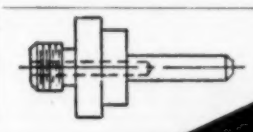


WE MAKE PARTS that you need PRONTO

WE WANT
VOLUME ORDERS
in METAL-PLASTIC-RUBBER

Adequate facilities, tools and personnel and 25 years of machine and parts building.

TURNING—BORING—FACING
CUTTING—TAPPING—COUNTERSINKING

Close co-operation assured on contracts for essential assembly parts, furnished complete or machined to closest toleration. Size up to 4 inches ideal for our capacity.

Send complete data for prompt response!

NEW JERSEY MACHINE CORPORATION
13th St. & Willow Ave. HOBOKEN, N. J.

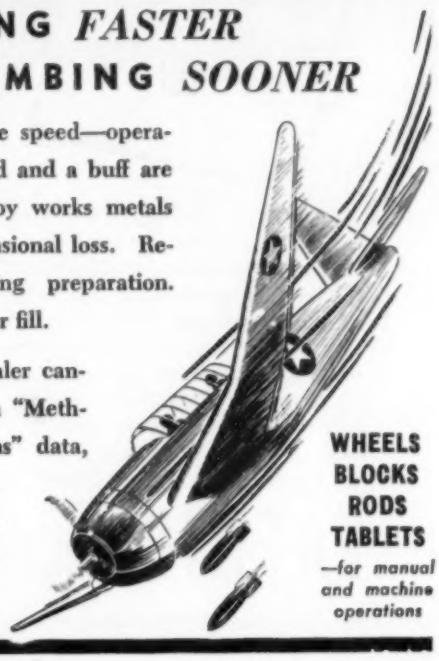
▲ Mention Item NED-3618 when writing ▲

ROBERTS
ightboy
REG. U.S. PAT. OFF.

DE-BURRING *FASTER*
Means BOMBING *SOONER*

regulation of machine speed—operations between a grind and a buff are eliminated. Brightboy works metals with minimum dimensional loss. Requires no time-taking preparation. Does not load, gum or fill.

Write us if your dealer cannot supply you with "Methods and Applications" data, catalogs and prices. Our field representatives are at your service.



WHEELS
BLOCKS
RODS
TABLETS
—for manual and machine operations

▲ Mention Item NED-3616 when writing ▲

BACK UP FIGHTING COURAGE with the deadliest guns, bombs, tanks and planes, and you've got America's formula for victory. Speeding up assembly . . . removing production bottlenecks . . . preventing hitches in the speeding movement of vital war materials is Mathews' contribution to America's war effort.

MATHEWS CONVEYERS FOR MECHANIZED PRODUCTION

ON ER COMPANY ELLWOOD CITY PENNSYLVANIA

▲ Mention Item NED-3617 when writing ▲

MORE!
PRODUCTION PER MAN
with THESE
Paragons of Performance

Men are scarce . . . war demands maximum production from each . . . Paragon Automatic Electric Timers greatly increase production per man. They are doing it in thousands of applications, such as: watchman signals, power disconnect, conveyor operation, pump operation, light exposure, liquid agitation, enamel baking, heat treating, rubber curing, plastic molding, etc.

Let us help apply automatic time controls to one or more of your operations. Just give us the details and one of our Timer Engineers will make recommendations without obligation.

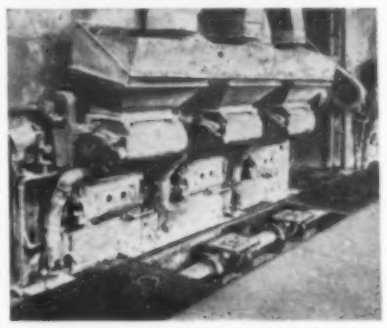
WRITE FOR THIS BOOK . . . Describing industrial timers, time-switches and other time controls. Contains illustrations, construction and installation data, list prices and reference information. PARAGON ELECTRIC CO., 413 So. Dearborn St., Chicago, Illinois

Automatic reset sequence timer

Paragon Chicago

▲ Mention Item NED-3619 when writing ▲

ASH HANDLING SYSTEM

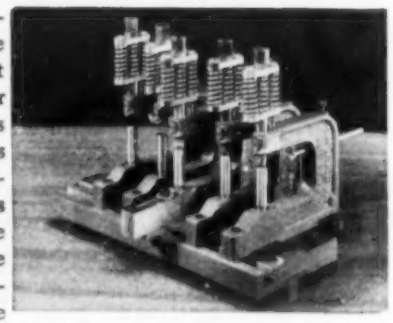


Adaptable to both large and small boiler units, Vac-Veyor pneumatic ash handling system uses minimum of critical materials. System is particularly adaptable for installation in oil to coal conversion, as it requires little change in boiler room set-up.

Layout consists of ash conveyor pipe line, assembled from white cast iron pipe units laid in channel in front of ash pit doors. Intake hoppers are set in line. All ashes and dust from boilers are drawn through hoppers by steam actuated vacuum producing unit which draws ash through line to outside storage silo. Discharge gate in silo provides for removal of ash by truck or railroad car. Made by **Beaumont Birch Co.**, 1508 Race St., Philadelphia, Pa.

▲ Mention Item NED-3620 when writing ▲

HOLE PUNCHING UNIT

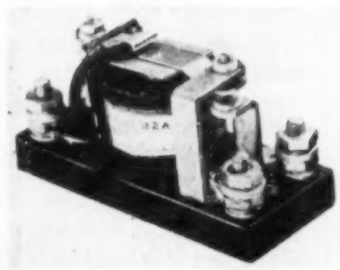


Having built-in adjustable adapter, type CA hole punching unit permits off center or staggered hole patterns when used in press brake set-ups. Adjustment is 1½ inches front to back. Because both punch and die are in same independent holder, units can be located in exact position by sliding along press rail, using master pattern as guide.

Same group of punching units can be reset or removed to provide unlimited center-to-center distances. Three-spring selective stripper provides sufficient pressure to strip any metal punch will penetrate. Units are made in complete range of sizes to punch holes up to 5/16 inch in diameter. Made by **Wales-Strippit Corp.**, North Tonawanda, N. Y.

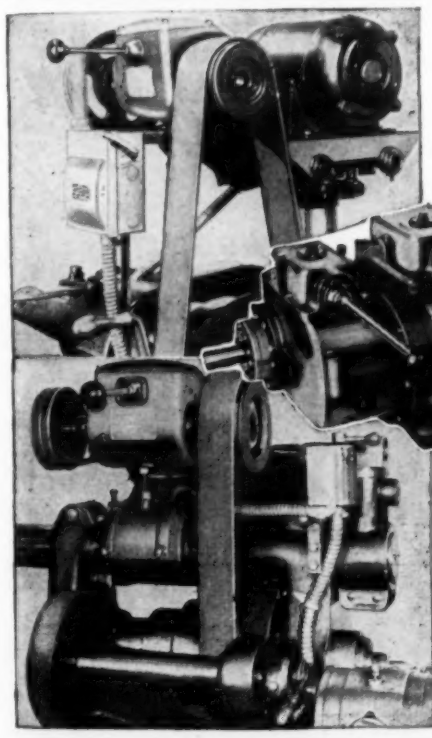
▲ Mention Item NED-3621 when writing ▲

AIRCRAFT POWER RELAY



Designed particularly for aircraft power circuits, Bulletin 103 relay will perform at high values of acceleration, and also under conditions of vibration and shock. Armature and contact assembly are designed to retain either position under these conditions. Normally open, single pole contacts are rated 25 amperes at 24 volts direct current non-inductive load. Contact gap and tail spring tension are adjustable. Two holes are provided in Bakelite base for mounting. Made by **Ward Leonard Electric Co.**, 51 South St., Mount Vernon, N. Y.

▲ Mention Item NED-3622 when writing ▲



Western MASTER (1-5 h.p.) transmission including standard bracket f.o.b. Detroit 95.00

Western SUPER (10-30 h.p.) suitable for replacing gear boxes on large boring mills, radials, Ingersol milling machines etc. to motorize large slotters, engine and turret lathes.

Western MAJOR (5-10 h.p.) transmission including standard bracket f.o.b. Detroit 145.00

SEND FOR NEW FOUR PAGE CATALOG . . .
prompt deliveries on high priorities

up to 30 h.p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Belt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.
WESTERN TRANSMISSIONS
3400 SCOTTEN, DETROIT, MICHIGAN

▲ Mention Item NED-3623 when writing ▲

OIL FREE—WAX FREE

Transparentized by ALBANITE

ALBANENE* is made of 100% long fiber pure white rags—treated with *Albanite*—a new synthetic solid, physically and chemically inert. ALBANENE will not oxidize, become brittle or lose transparency with age. ALBANENE has a fine hard "tooth" that takes ink or pencil beautifully, makes tracing simple and produces strong sharp blueprints. Ask your K & E dealer, or write us for brochure and generous working sample.
*Trade Mark

EST. 1867
KEUFFEL & ESSER CO.
NEW YORK—HOBOKEN, N. J.
CHICAGO · ST. LOUIS · SAN FRANCISCO · LOS ANGELES
DETROIT · MONTREAL

K&E Albanene
THE STABILIZED TRACING PAPER

▲ Mention Item NED-3624 when writing ▲

More than . . . a printmaking process

"THE OZALID MODEL B"

WITH an Ozalid machine you make whiteprints direct from your engineering drawing in two fast steps—Exposure and Dry Development . . . the most simple method on record.

But that is only part of the story—check these extra values.

1. You can make transparent prints in the same manner as standard prints—no Van Dyke tie-ups. You can use these in place of valuable originals . . . or to eliminate redrafting when it's necessary to make design changes.

2. You get the most complete line of sensitized materials. You can make prints having blue, black, and maroon lines on a white background—prints which will be permanent and true-to-scale.

3. You can use cut sheets as well as roll stock, thereby eliminating trimming waste.

4. Your maintenance costs are lowest. Any inexperienced person can operate an Ozalid machine. The Model "B"—designed for large-scale production—consumes only 4.4 kilowatts at top speed.

Write for catalog and sample booklet of Ozalid whiteprints. See how leading manufacturers save time, labor, and materials.

OZALID PRODUCTS DIVISION
General Aniline & Film Corporation • Johnson City, N. Y., U. S. A.
OZALID IN CANADA—HUGHES OWENS CO., LTD., MONTREAL

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NOW AVAILABLE!
SEPARATE ENGINEERING BULLETINS ON:

- ☐ CARBIDE TOOLS
- ☐ CARBIDE DIES
- ☐ HIGH-SPEED STEELS
- ☐ DIE STEELS
- ☐ TOOL STEELS
- ☐ DRILL RODS

Check Your Choice!
(OR WRITE FOR SPECIFIC BULLETINS BY NAME)

Firth-Sterling
STEEL COMPANY
McKEESPORT, PA.

▲ Mention Item NED-3626 when writing ▲

"DUST CONTROL KNOW HOW"

• The "Dust Control Know How" of Pangborn Corporation is compiled and correlated in new Bulletin No. 909. It is a complete digest of thirty-five years' experience and progress in the Control of Industrial Dust.

• No dust problem is too large or too small for efficient and economical solution — yours is included and covered in this interesting treatise. Write today for your copy of Bulletin No. 909.

ARMY E NAVY

PANGBORN

WORLD'S LARGEST MANUFACTURERS OF DUST CONTROL AND BLAST CLEANING EQUIPMENT
PANGBORN CORPORATION • • HAGERSTOWN, MD.

▲ Mention Item NED-3639 when writing ▲

TO MEASURE...

Moisture Content of Atmospheres or Gases—Quickly and Accurately

The G-E dew-point potentiometer

THIS device functions by measuring the dew-point or temperature at which moisture in a sample of gas will condense.

Extremely valuable in determining the moisture content in furnace atmospheres.

Also used in checking moisture content of other noncorrosive gases—particularly oxygen breathed by aviators at high altitudes.

Ask the nearest G-E office for Bulletin GEA-3450.

If you have ANY kind of measurement problem, call or write our nearest office for information on how the G-E Special Products Section can help you meet your individual requirements.
General Electric, Schenectady, N. Y.

800-7-8861

GENERAL ELECTRIC

▲ Mention Item NED-3630 when writing ▲

GREATER EFFICIENCY *Round-the-Clock*

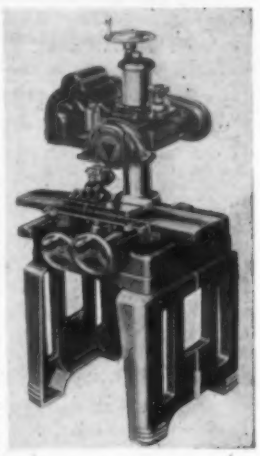
Today, when tools must be operated Round-the-Clock, the simple design and dependability of ARO Pneumatic Tools are proving their outstanding superiority on small tool operations such as drilling, grinding, screwdriving, nut-setting and many special applications. Investigate ARO. Write for catalog. Ask ARO Field Engineers to help solve your *special* tool problems.

THE ARO EQUIP. CORP. ARO BRYAN, OHIO

PNEUMATIC TOOLS

▲ Mention Item NED-3631 when writing ▲

CHIP BREAKER GRINDER



Combining features of standard machines with advance design features, this chip breaker grinder is adaptable for grinding chip breaker grooves in carbide tipped tools, as well as accurate grinding of form tools, thread chasers and similar operations. Use of Univise adapts machine to surface grinding operations. Vise is fully adjustable in all planes and can be used independently on milling and drilling machines.

Features include special wheel mounting arrangement which permits interchange of wheel and adapter, precision spindle, column which rotates full 360 degrees, micrometer adjustments, and coolant attachment. Made by **Delta Mfg. Co.**, 614 E. Vienna Ave., Milwaukee, Wis.

▲ Mention Item NED-3632 when writing ▲

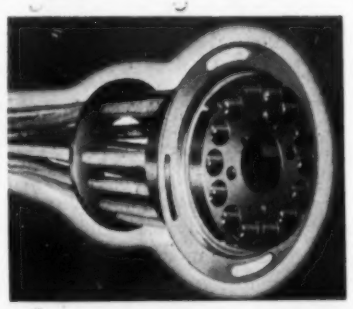
STEAM-JACKETED STRAINER

Developed to speed handling of highly viscous liquids or liquids that are solid at room temperatures, steam-jacketed strainer maintains liquid in strainer at same temperature as in piping. It has wide application in many of process industries. Bottom and sides of unit are completely enclosed in steam jacket. Two inlet and two outlet ports are provided for steam line connection.

Standard capacities are 20, 50, 100 and 200 gallons per minute. Pipe sizes are 1, 2 and 3 inches. Maximum operating pressure is 50 pounds per square inch at temperature of 600 degrees Fahr. Jacket is suitable for 125 pounds steam pressure. Made by **Blackmer Pump Co.**, 1976 Century Ave., Grand Rapids, Mich.

▲ Mention Item NED-3633 when writing ▲

CATHODE RAY TUBE SOCKET



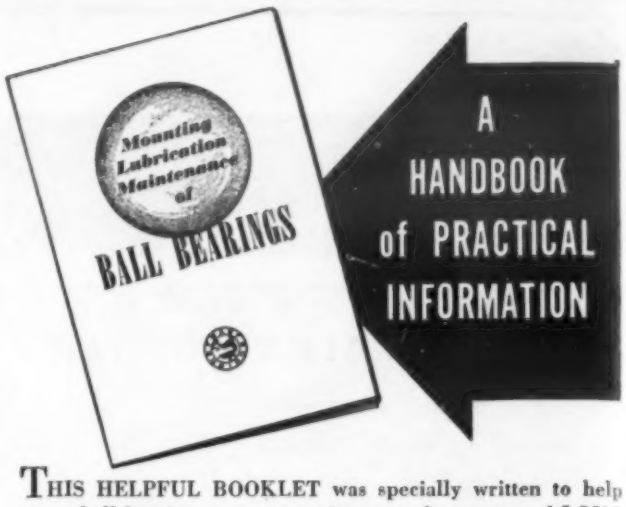
Completely enclosing and sealing contacts against temperature and humidity conditions, this one piece molded construction cathode ray tube socket provides high voltage flashover at high altitudes and high resistance between adjacent pins. Strain relief ring protects soldered joints against vibration pull or twist of wires. Sockets are supplied in either assembled units complete with cable or ready for assembly. Made by **A. W. Franklin Mfg. Co.**, 177 Varick St., New York City.

▲ Mention Item NED-3634 when writing ▲

WITH *Vemco Drop Bow* COMPASS

V & E MANUFACTURING CO.
PASADENA • CALIFORNIA

▲ Mention Item NED-3635 when writing ▲



A HANDBOOK of PRACTICAL INFORMATION

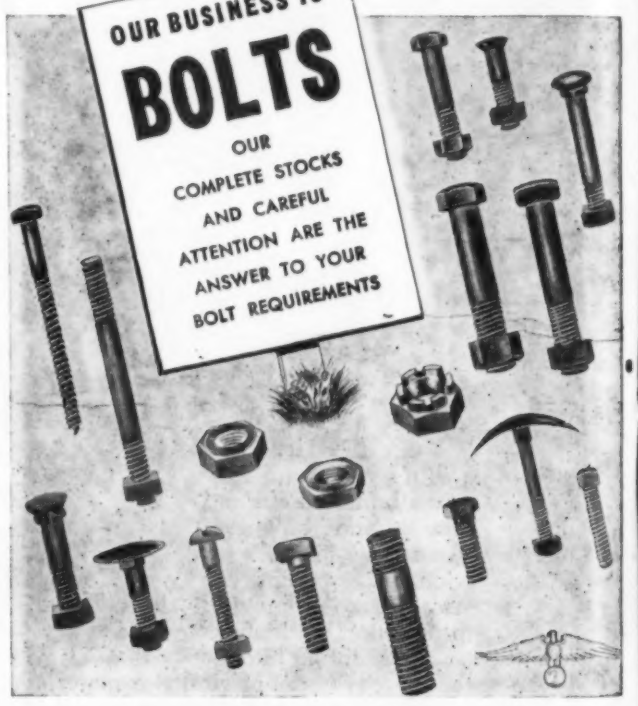
THIS HELPFUL BOOKLET was specially written to help every ball bearing user get maximum performance and LONG LIFE out of hard-to-replace bearings.

The information it contains will help you to *avoid* premature bearing replacements. It tells you how to handle bearings, how to take care of them . . . to make them last. It tells you how to make proper, trouble-free mountings . . . what types of oils and greases to use.

Following the instructions given here will save you a lot of grief . . . write for copies today. It's free. The Fafnir Bearing Company, New Britain, Connecticut.

FAFNIR *Ball Bearings*

▲ Mention Item NED-3636 when writing ▲



Established 1855

THOMAS P. SKELLY BOLT COMPANY
PHILADELPHIA CARRIAGE BOLT WORKS
1828-32 West Ingersoll St. Philadelphia, Pa.

▲ Mention Item NED-3637 when writing ▲

"Piping Pointers" give the answers

For your trainees, there's valuable help in Bulletin 6 of "Piping Pointers"—a Crane service aiding hundreds of plants in better wartime maintenance. Anyone can use the timely short-cuts to faster piping jobs and the safe hints it gives on substitutions for critical materials. Copies free on request. Address Crane Co., 836 S. Michigan Ave., Chicago, Ill., or ask your Crane Representative.

CRANE VALVES

▲ Mention Item NED-3638 when writing ▲

★ American MonoRail Cranes prove invaluable in hundreds of installations. With structural design greatly simplified, dead weight of the crane bridge is kept at the lowest point consistent with strength. This provides maximum live load capacity and requires less effort to move. Elimination of friction at all points by the scientific use of proper bearings make American MonoRail cranes the easiest of all to handle.

Let an American MonoRail Engineer consult with you.

THE AMERICAN MONORAIL CO.
13116 Athens Ave. ★ Cleveland, Ohio

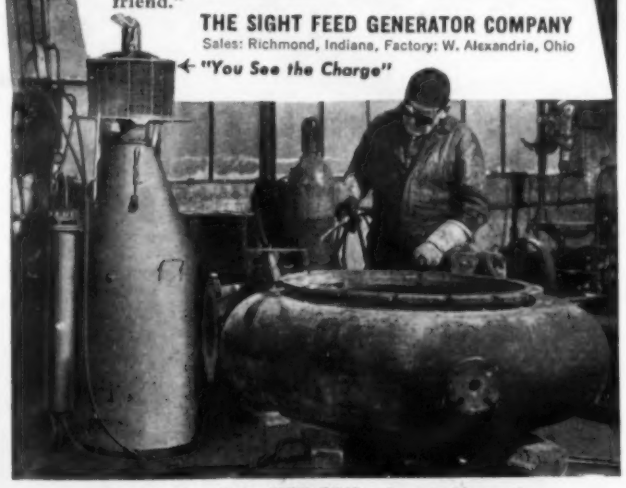
▲ Mention Item NED-3639 when writing ▲

"Sight Feed's my choice"

SAYS FRANK HAMMONS OF INDIANAPOLIS

● "Yes, sir, I've had my Sight Feed over four years now. And I figure it's CUT my acetylene costs about three-fourths. Mind you I'm not *tight*, but I am *thrifty*—for, after all, I'm in business to make money. Too, I like Sight Feed's *visible* carbide supply. It never lets me down in the middle of a big job. And Sight Feed is *flexible*—handles *any* torch at *any* pressure! In short, it's just a good all 'round piece of equipment I'd recommend to my best friend."

THE SIGHT FEED GENERATOR COMPANY
Sales: Richmond, Indiana, Factory: W. Alexandria, Ohio
← "You See the Charge"



▲ Mention Item NED-3640 when writing ▲

Production-proved in leading aircraft plants!

Adhere SPRAYMASK

For protecting plastic-glass parts during assembly and painting

A tough one-coat spray-on mask . . . used by major aircraft manufacturers. One application serves a double purpose: protects flat or formed plastic-glass parts against abrasion and scratches during assembly; serves as a mask during painting. Adhere Spraymask is waterproof; resists penetration of paint, grease and oil. Applied with spray gun. Dries quickly. Peels off clean. Has no chemical action.

Manufacturers of Adhere Spraymask, Ready-to-apply Insignia and Window Masks and Edge-gummed Masking Paper in Rolls . . . and now, Adhere Rivet Tape.

Adhere Inc. 1220 Maple Ave. • Los Angeles, California

▲ Mention Item NED-3641 when writing ▲

COOLANT SPOUT

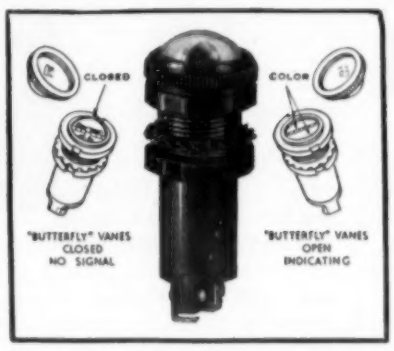
Leakproof and scale proof, Bullseye coolant spout is readily adjusted by finger tip pressure to any angle or curve, directing coolant stream directly on tool. Flexibility permits easy readjustment as work progresses and eliminates elbow, toes, ells, connectors and adaptors that complicate rigid piping.

Spouts are available in range of sizes from ⅛ to ¾-inch inside diameter, in any length. They are easy to install and service and are adaptable also for oil, air, water, steam or grease. Made by J. N. Fauver Co., 47 W. Hancock Ave., Detroit, Mich.

▲ Mention Item NED-3642 when writing ▲

INDICATOR LIGHT

Actuated entirely by reflected light or radio activity, No. 1534 Signalette indicator light is designed for use in aircraft wherever a signal light is needed. Unit will operate by fluorescence under "black" or near ultra-violet light from usual sources within aircraft Radium-active fluorescent paint shows signals in total darkness.

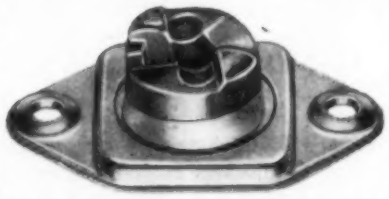


Body of indicator houses solenoid, armature of which is connected with butterfly type indication vanes by simple lever arrangement. Fluorescent butterfly opens instantly to show signals, reflecting proper indicating light. Red, green and amber colors are available. When not indicating, unit is black. Current consumption is 1.5 watts. Made by Littelfuse Inc., 4743 Ravenswood Ave., Chicago, Ill.

▲ Mention Item NED-3643 when writing ▲

FLOATING CAM FASTENER

Allowing large spotting tolerances, this floating cam collar is one design in complete line which includes straight, corner, ear and bracket models. Rivet type cam collars are used for interchangeability with other fasteners and where limited edge clearance prevents company's standard single hole mounting. These devices are adaptable to metal, plastic and plywood. Collars can be used with both slotted and wing head stud assemblies of same series. Made by Camloc Fastener Corp., 420 Lexington Ave., New York City.



▲ Mention Item NED-3644 when writing ▲

How a BAKER CRANE TRUCK solved a tough problem for Bailey Meter Co.

This Baker crane truck handles a wide variety of castings, bar stock and other materials—from incoming carriers, in plant and warehouse and to shipping. Besides substituting for removed overhead cranes, it assists in the erection of control panels, tiers material to save space, and performs many operations not originally anticipated. Thus production was increased without enlarging plant.

Baker may solve similar problems for you. Check with us now for current or post-war needs.

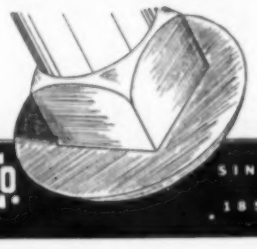
BAKER INDUSTRIAL TRUCK DIVISION of the Baker-Raulang Co.
2179 WEST 25th STREET • • • CLEVELAND, OHIO

1608-1E-43

Baker INDUSTRIAL TRUCKS

▲ Mention Item NED-3645 when writing ▲

the scientifically made line of QUALITY BOLTS and NUTS. Clark also manufactures a complete line of SCREWS and RIVETS of all types and sizes.



CLARK BROS BOLT CO. SINCE 1854
MILLDALE, CONN.

▲ Mention Item NED-3646 when writing ▲

WHEN N. S. Wittman, rice grower near Beaumont, Texas, discarded an obsolete horizontal side-suction pump and replaced it with a modern, Fairbanks-Morse 20-inch Figure 6310 Propeller Pump, he got *more water in less time* and *at less power cost. More water* at *less power cost* means as much to industry as to an agricultural operation.

Certain types of pumps ten or twelve years old, even if as good as new, require as much as 10 to 15% more power than today's more efficient Fairbanks-Morse Pumps of identical capacity. A reduction in power consumption is worth investigating *now*!

Write Fairbanks-Morse & Co., 600 South Michigan Ave., Chicago. Branches with service stations throughout the United States and Canada.

FAIRBANKS-MORSE Pumps

DIESEL ENGINES, PUMPS, MOTORS, GENERATORS, SCALES, WATER SYSTEMS, FARM EQUIPMENT, STOKERS, AIR CONDITIONERS, RAILROAD EQUIPMENT

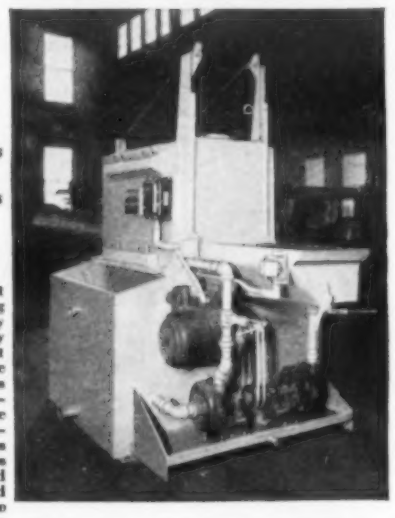
▲ Mention Item NED-3647 when writing ▲

When Space and Production are Limited . . . here's big "little 5 x 5"

RANSOHOFF CLEANING EQUIPMENT

for washing and rinsing projectiles, highly finished machine parts and miscellaneous work

• • •



THIS small but mighty cleaning machine (it's only 5 ft. square) really does a big job at lowest possible cost. Work is loaded and unloaded from one end of the machine. It is handled in racks which are placed on a carriage and pushed into the machine, the door is closed and the pump started. The carriage is moved back and forth under the spray by a handle extending through a stuffing box in the end of the machine.

It will pay you to look into this . . . we'll be glad to give you full details.

N. RANSOHOFF, Inc. 1319 Township Ave. CINCINNATI, OHIO

▲ Mention Item NED-3648 when writing ▲

Because of its many applications to all forms of heat (and cold) control, the THERMOSWITCH has long been outstanding. Special and standard mounting heads has made adaptation possible in most branches of industry. Pictured above is a cutaway view of the cartridge THERMOSWITCH showing the precision parts and rugged, unique construction. Write for details.

Fenwal INCORPORATED 70 MAIN ST. ASHLAND MASSACHUSETTS

▲ Mention Item NED-3649 when writing ▲

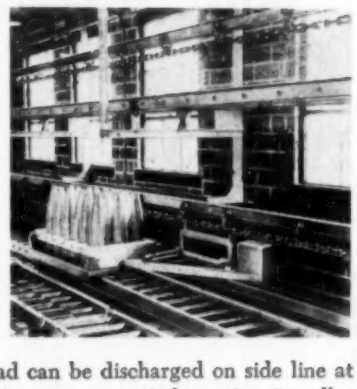
▲ Mention Item NED-3650 when writing ▲

INSPECTOR'S MARKING KIT

Intended for use with S-22 synthetic rubber marking stamps and acid etching inks, this inspector's kit is light in weight and can be carried easily. Kit is made of acid proof material and holds four stamps, acid etching ink in one bottle and oil or neutralizer in another. Stamp pad is kept in drawer. In marking operation, inspector selects required stamp, tilts self-closing cover on top of kit, inks stamp and then cover closes automatically. Acid fumes are not permitted to escape. After part is marked, drop of oil or neutralizer is applied to impression. Made by **Jas. H. Matthews & Co.**, 3947 Forbes St., Pittsburgh, Pa.

▲ Mention Item NED-3651 when writing ▲

CHAIN PUSHER CONVEYOR



Loaded skids are handled along roller bed by this chain pusher conveyor. Pusher is mounted on trolleys riding on "I" beam track and is pulled along by chain. There is no interference with load which is carried on skid platform fitted with wood runner underneath to act as guide on inside of roller frame. Load can be discharged on side line at any desired point by opening gate or switch section in roller bed. Skids are fed back on pusher by another switch section. Heavy loads can be moved along with minimum of power. Multiple drive can be used on single chain and run can extend through entire plant or several buildings. Made by **The Alvey-Ferguson Co.**, 31 Disney St., Cincinnati 9, O.

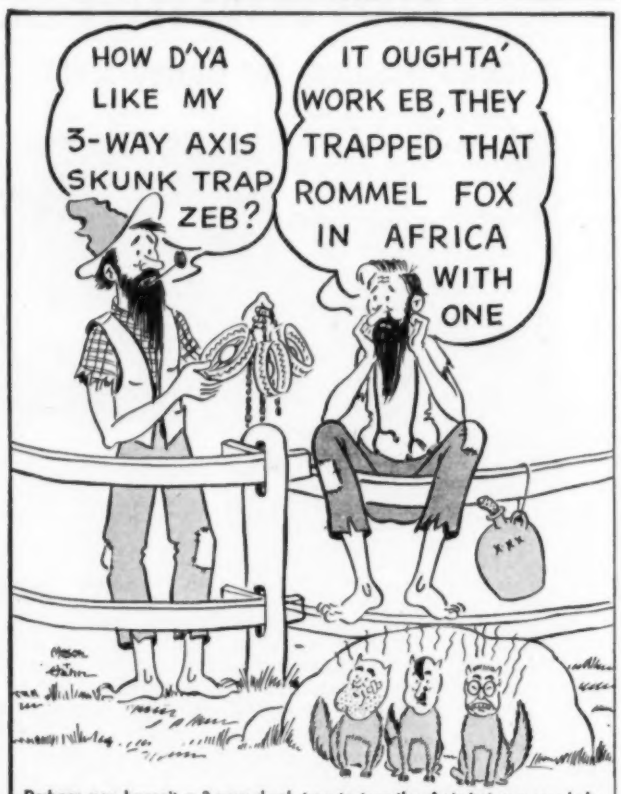
▲ Mention Item NED-3652 when writing ▲

DIAMOND DRESSING TOOL

Eliminating the need for a special grinding wheel dresser for each machine, Kodi diamond dressing tool is supplied initially with special shank or Ko-Adaptor fitted with recessed head set screw which locks standard nib in position. Only nib is removed for resetting or replacement, adaptor remaining in machine.

Graduations guide operator in setting tool. Because diamonds are turned frequently, sharp points are assured. Tool fits most standard grinding machines. Made by **Koebel Diamond Tool Co.**, 9462 Grinnell Ave., Detroit, Mich.

▲ Mention Item NED-3653 when writing ▲



Perhaps you haven't a 3-way skunk trap to trap the Axis but you can help to defeat this murderous trio in conserving vital tool steels by welding your broken tools and dies with EUREKA Tool Steel Electrodes. We also feature the "SUTTONIZING" welding process for restoring your high speed cutting tools in our own plant.

WELDING EQUIPMENT & SUPPLY CO., 223 Lieb St., Detroit, Michigan

▲ Mention Item NED-3654 when writing ▲

● Send your crippled VICTOR cutting tips to your VICTOR Distributor for prompt and proper reconditioning. DON'T THROW THEM AWAY. COPPER IS PRECIOUS FOR OUR WAR EFFORT. If you treat your cutting tips carefully, see to it that their seating surfaces are not marred, and use proper tip cleaning drills to keep ports free from obstruction, they will last a long time.

UNDER NO CIRCUMSTANCES THROW CUTTING TIPS AWAY—SEND THEM TO PROPER REPAIR STATIONS.

VICTOR EQUIPMENT COMPANY

SAN FRANCISCO—844-54 Folsom St. LOS ANGELES—3821 Santa Fe Ave.

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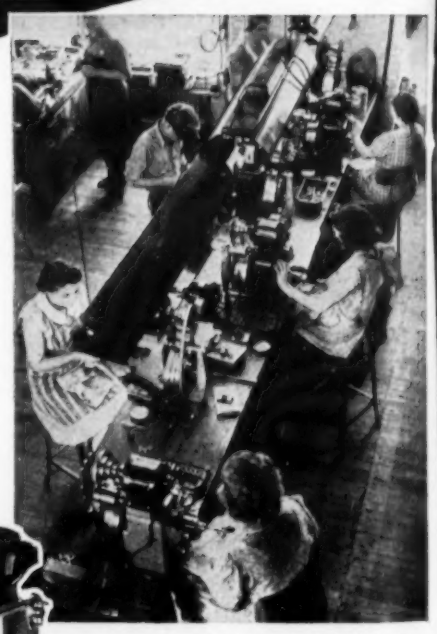
SUNNEN HONING

Provides a Finish of 2 to 3 micro inches

and at a Saving of **35% in time!**



Battery of 6 Sunnen Precision Honing Machines in completely air-conditioned room — honing to .0001" tolerance.

Accuracy — and a super-smooth finish with a real increase in production which means a saving in cost. That's the record of the Sunnen "MA" Precision Honing Machine in the modern plant of the Fidelity Machine Company.

Consider These Advantages

Wide range — handles internal diameters of .185" to 2.625". Accuracy within "one-tenth" guaranteed — has been held to .000025" on production jobs. Relieves big internal grinders for other jobs. Corrects errors of out-of-roundness or taper caused by previous operations. Facilitates duplication of sizes. Does not require skilled labor. Practical — inexpensive — economical to operate.

Put Sunnen Honing to work in your plant!

SUNNEN

SUNNEN PRODUCTS COMPANY

7931 Manchester Avenue, St. Louis, Missouri

Canadian Factory: Chatham, Ontario

▲ Mention Item NED-3656 when writing ▲

Longer Service from Your CURTIS AIR HOISTS and CYLINDERS

★ Follow these maintenance tips, and you'll get the longest possible service from your Curtis air-powered equipment:

1. When running a new air supply line, or relocating an old one, be sure to blow out all grit, rust, and chips before connecting to the hoist.
2. Do not install hoists close to an open furnace or other source of heat without shielding.
3. Put one-half pint of heavy cylinder oil into the cylinder through the oil plug in rear head every 30 days.
4. If piston jumps or jerks, it indicates improper oiling or binding of rod stuffing box. Keep stuffing box leak-tight only.
5. Fill oil cup on valve every 30 days.
6. Drain off any condensation in cylinder periodically.
7. Check valve disc and seat occasionally to prevent wear from grit or dirt in air line. A worn valve causes "creeping" and loss of efficiency.

Compressors — Air Hoists — Air Cylinders

CURTIS PNEUMATIC MACHINERY DIVISION
of Curtis Manufacturing Company
1979 Kienlen Avenue • St. Louis, Missouri

▲ Mention Item NED-3657 when writing ▲

Producers

. . . OF SPIRAL BEVEL GEARS

50 Gleason spiral bevel gear generators are "on the line" 24 hours a day, 7 days a week at the Fairfield plant turning out an incredible quantity of gears and pinions. Size range on Fairfield spiral bevel gears is from 1½" diameter to 28" diameter.

Here indeed are gear making facilities to handle virtually any type of job. Most of this production capacity is scheduled well ahead to fill orders from among America's largest war producers. These schedules must and will be met, for Fairfield takes pride in fulfilling delivery promises.

Perhaps we can help you too. Your inquiries will be given prompt attention. Also straight bevel, hypoid, spur, helical, herringbone and worm gears, worms and differentials.

ARMY E NAVY

FAIRFIELD MANUFACTURING CO.
317 S. Earl Avenue • Lafayette, Ind.

FAIRFIELD For FINE GEARS

▲ Mention Item NED-3658 when writing ▲

UNBRAKO
Reg. U. S. Pat. Office

The *Knurled Heads* SAVE TIME

because fingers can turn the "Unbrako" without slipping and lost motion. Where many socket cap screws are used in production, this saves much time. Sizes: No. 4 to 1½" diameter. Get the "Unbrako" Catalog for details.

Pat'd & Pats. Pending

Knurling of Socket Screws originated with "UNBRAKO" years ago.

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 581
— BRANCHES —
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

▲ Mention Item NED-3659 when writing ▲

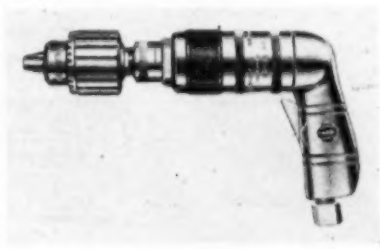
METAL FLANGING MACHINE

Requiring no special skill or experience to operate, Multi-Flanger will handle sheet metal of almost any practical gage. It will operate successfully on straight edges or with equal ease around unusual shapes, such as edges of disks or around inside and outside edges of circles. Length of forming operation is unlimited and metal is not scored, marked or mutilated in any way.

No large and costly dies are required to produce even most intricately shaped flanges. Small, inexpensive dies that are used with machine are interchangeable in few minutes time, making machine extremely flexible in changing from one job to another. Head is adjustable to provide wide range of operations. Machine takes up only 4 square feet of floor area for installation. Made by **Riverside Machinery Co.**, 10632 S. Michigan Ave., Chicago, Ill.

▲ Mention Item NED-3660 when writing ▲

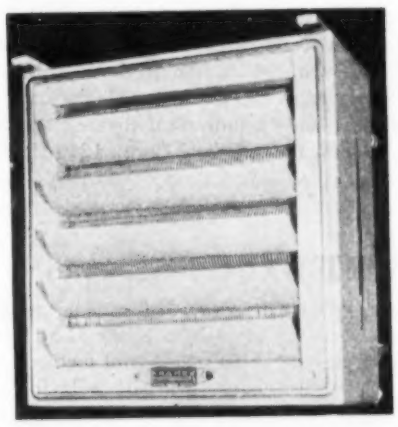
SMALL PNEUMATIC DRILL



Added to regular line of rotary pneumatic tools, this ⅜-inch capacity air drill is available in both straight and right angle styles. Tools are suitable for wide range of operations in industrial plants, aircraft factories and shipyards. Made by **The Aro Equipment Co.**, Bryan, O.

▲ Mention Item NED-3661 when writing ▲

UNIT COOLERS



Designed to comply with latest government limitations on critical materials, this model Coolmaster unit cooler utilizes all steel, hot galvanized coil. Units can be used with freon, methyl, sulphur, ammonia or brine. There are no welded or soldered return bends. Heat exchanger is furnished.

One man suspension brackets are furnished for easy mounting. Units are finished in chrome gray shade of crackle baked on bonderized base. Fans are connected directly to totally enclosed motors specially built for fan duty and long life. Number of models of coolers has been reduced to facilitate quick delivery. Made by **Kramer Trenton Co.**, 600 Brunswick Ave., Trenton, N. J.

▲ Mention Item NED-3662 when writing ▲

DIAMONDS for Victory

BIG-HED-NIBS
LOC-KEY-SET

- Three grades of diamonds. Common Quality $12 per karat. Medium quality $24 per karat. Select quality $48 per karat. (Contour template diamonds supplied only in Medium and Select quality.)

All diamond sizes ¼ to 10 karat are nib mounted for immediate shipment . . . Billed subject to approval. Specify quality of diamond wanted. We recommend a minimum size of one karat for each 6" diameter of grinding wheel. (24 hour resetting service, $1.00 post paid.) Grinders instruction card free.

RE-SET-ABLE

Cooler dressing
Closer Tolerances
Micrometer Accuracy

Because: Wing key heat dissipation and absolute diamond lock nib.

The Most Complete and Up-to-the-Minute Line of Diamond Tools for War Production. Send for Free Catalog.

DIAMOND TOOL COMPANY, Not Inc.
Sheldon M. Booth, Pres.
940 E. 41st Street CHICAGO, ILL.

▲ Mention Item NED-3663 when writing ▲

DON'T LET THEM DOWN!

Our fighting men will out-blitz the enemy if we will give them the guns and the shells. So, let's all stay on the job *every* day to keep the equipment, ammunition and supplies rolling off the production line. And let's lend *every* dollar we can spare for War Bonds.

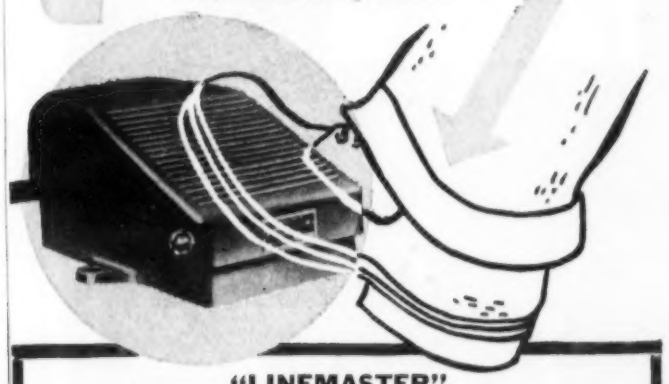
THE GARLOCK PACKING CO.
PALMYRA, NEW YORK

In Canada: The Garlock Packing Company to Canada Limited, Montreal, Que.

GARLOCK

▲ Mention Item NED-3664 when writing ▲

"STEP ON IT"
FOR STEPPED-UP PRODUCTION AT REDUCED COSTS!



"LINEMASTER"
FOOT TREADLE SWITCH

Here's a fool-proof, positive-action switch that's helping plants all over America to "Beat the Promise!" Especially valuable for machines of all types which must be stopped and started frequently; leaves both hands free for work. Rated at 20 Amps—125-250 volts; 10 Amps—440-575 volts, up to 2 H. P. Four models in double-pole and three pole mechanism; press to start, press to stop, or press and hold down for closed circuit.

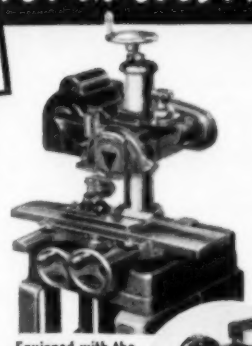
Write Today for Bulletins and Price List

SIMONDS MACHINE CO., Inc.
33 Viking Terrace Southbridge, Mass.

▲ Mention Item NED-3665 when writing ▲

New Delta Chip-Breaker Grinder is simple, fast, dependable, accurate —and *much lower in cost . . .*

Gives all-around, long-time satisfaction in grinding the chip-breaker groove on carbide-tipped tools—used also for other production grinding.



In grinders costing many times as much, you do not find many of the new, exclusive features you get in this latest Delta machine. It's husky, solid (weight 700 pounds), over 6 feet high, an accurate machine designed to turn out a big volume of work. Yet its cost is amazingly low.

Spindle shaft specially designed. Bearings widely spaced to provide permanently true alignment. Wheel mounting system permits removing either wheel alone, or wheel and adapter. Table is smooth operating.

Equipped with the new "UNIVISE" . . . holds the tool at any conceivable angle

Four distinct planes of adjustment. Can be accurately reset at a moment's notice. Investigate—see this new machine at your Delta industrial distributor's—check priorities and deliveries.

M-1F

DELTA MILWAUKEE Machine Tools

Tear Out and Mail This Coupon for Full Details

THE DELTA MANUFACTURING COMPANY
616G E. Vienna Ave., Milwaukee 1, Wis.
Please send me your new catalog giving full details on the Delta Chip-Breaker Grinder and your full line of low-cost machine tools.
Name.....Position.....
Company.....
Address.....
City.....(....) State.....

▲ Mention Item NED-3666 when writing ▲

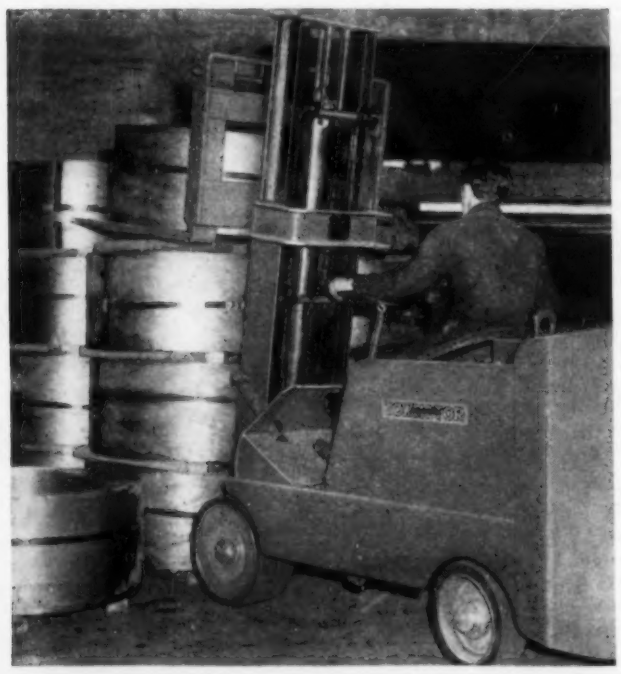
▲ Mention Item NED-3668 when writing ▲

The F. M. C. Automatic Multiple Head Screw Driver can do it, in any pattern. For more information about this machine and machines that automatically drive up to 32 nails at one time in any pattern, write for free catalog. Address Food Machinery Corporation, Riverside, California.

F.M.C. AUTOMATIC NAILING & SCREW DRIVING MACHINES

"Serving Industry Since 1905"

▲ Mention Item NED-3669 when writing ▲



In less than one hour, one man and a Towmotor unload and store a carload of 4500-pound coils of hot-rolled strip steel! Want the facts about efficient materials handling in your field? Then write Towmotor Corporation, 1219 E. 152nd Street, Cleveland, Ohio, and . . . *ASK FOR CATALOG!*

TOWMOTOR THE 24-HOUR ONE-MAN-GANG

▲ Mention Item NED-3670 when writing ▲

TIME-INTERVAL METER

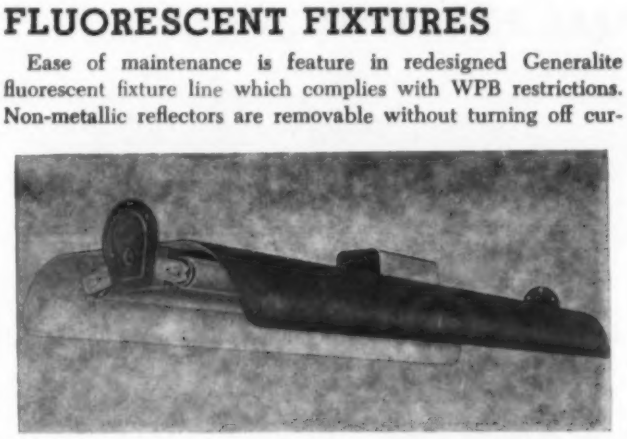
Accurate measurement of extremely short time intervals is possible with this electronic time-interval meter. It is designed for timing interval between two events which can be converted into electrical impulses, such as elapsed time between closing or opening of two controls, between two impulses of phototube or between electrical impulse and light impulse.

Consisting of electronic panel and phototube with preamplifier stage, meter has eight ranges which are selected by means of tap switch so that any time interval between 0.0001 and 3 seconds can be measured. It operates on 115-volt, 60-cycle lighting circuit and meter is stabilized so that line voltages do not affect accuracy, which is 2 per cent of full scale. Made by **General Electric Co.**, Special Products section, Schenectady, N. Y.

▲ Mention Item NED-3671 when writing ▲

FLUORESCENT FIXTURES

Ease of maintenance is feature in redesigned Generalite fluorescent fixture line which complies with WPB restrictions. Non-metallic reflectors are removable without turning off current or removing bulbs. V-shaped wiring channel separates two 40-watt lamps and acts as reflector.



Model MF-240 uses two 40-watt lamps and model MF-2100 uses two 100-watt lamps, both being equipped with conventional ballasts. Three four-lamp units are available for continuous line or individual lighting applications. Made by **The Fostoria Pressed Steel Corp.**, 1240 Harris Rd., Fostoria, O.

▲ Mention Item NED-3672 when writing ▲

PAINT STRIPPER

Paint, lacquer and enamel can be readily removed from steel surfaces by dipping in Kelite G-Stripper. This hot tank material, developed by pH control methods, is in powder form. It is dissolved in water, one part to 16 for normal use.

Solution is claimed to hold effective operating strength for long period and has excellent rinsing qualities. Where soaking is impractical, powder can be mixed with corn starch and water into paste for cold stripping. Made by **Kelite Products, Inc.**, 909 E. Sixtieth St., Los Angeles, Calif.

▲ Mention Item NED-3673 when writing ▲

POWERS

INDICATING and RECORDING THERMOMETERS

Some of the many different types of Dial Indicating and Recording Thermometers we make are shown here. We also make Recording Regulators and Regulators combined with easy to read Indicating Thermometers. **Write for Bulletins.** Specify type of instrument in which you are interested.

THE POWERS REGULATOR CO.
2740 Greenview Avenue, CHICAGO

Offices in 47 Cities—See your phone directory

50 Years of Temperature and ★ Humidity Control ★

▲ Mention Item NED-3674 when writing ▲

TURCO

TURCO TYPE X

SPECIALIZED FOR SALVAGE OPERATIONS

TURCO TYPE X is designed and processed scientifically to remove grime without attacking metal. For dismantled parts, valves, fittings and motor overhaul, use TURCO TYPE X in a hot tank immersion at 8 Oz./Gal., followed by rinsing. Also designed for the reconditioning of heavy equipment.

If the grease and soil are heavy and tough, TURCO TYPE X will expedite your reclamation shop operations.

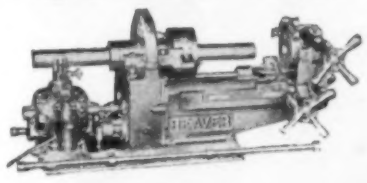
Turco Service Engineers are freely available for consultation on cleaning and maintenance operations in all industries. Write the home office or phone your local Turco service representative. For information about Type X, send name, address, title and firm to

TURCO PRODUCTS, INC.

Los Angeles — Chicago
Main Offices & Factory — 6135 S. Central Ave., Los Angeles, Calif.
Midwest Factory — 4856 S. Halsted Street, Chicago, Ill.
Service Representatives and Warehouse Stocks in All Principal Cities.

▲ Mention Item NED-3675 when writing ▲

The A-B-C of Pipe and Bolt Machines!

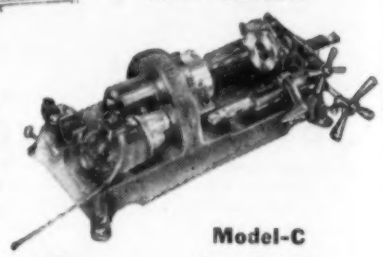


Model-A

A high-speed heavy-duty deluxe Pipe and Bolt Machine Range ⅛ to 2-inch —up to 12-inch with geared tools and drive shafts. Bolts, ¼ to 2-inch. Wt. 415 lbs. Ask for Bulletin-A.

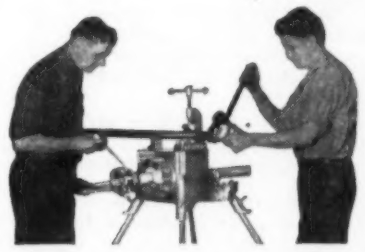
Model-B

A compact utility Pipe and Bolt Machine combining many features of Model-A with the easy portability of Model-C. Range ⅛ to 2-inch — up to 8-inch with drive shaft and geared tools. Bolts up to 1½-inch. Weight 280 lbs. Ask for Bulletin B.



Model-C

A sturdy little Power Unit



Converts Hand Pipe Tools into Power Tools from ⅛ to 8-inches. Threads 8-inch in 6 minutes. Threads bolts up to 1½-inch. Equipped with automatic chuck wrench ejector — a safety feature. Two men can use it at the same time without interference. Easily portable—weighs about 150 lbs. Write for Bulletin-C.

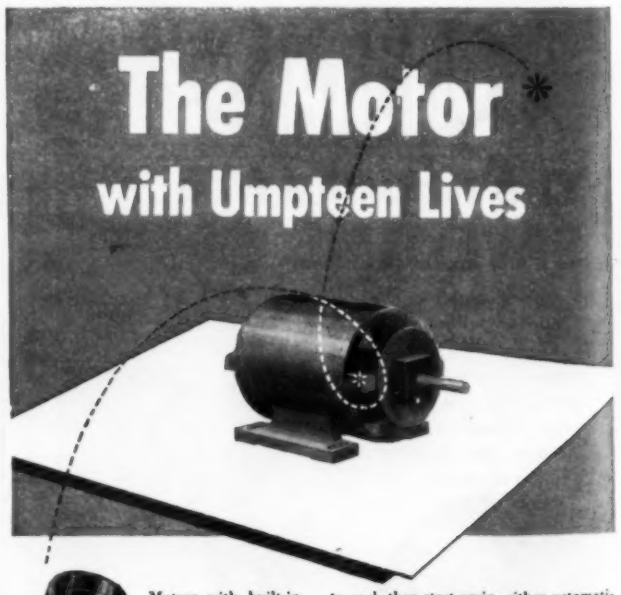
Also a Complete Line of Hand Tools!

BEAVER PIPE TOOLS

743 HENRY AVE. WARREN, OHIO

▲ Mention Item NED-3676 when writing ▲

The Motor* with Umpteen Lives



Motors with built-in Klixon Protectors have more lives than an alley-full of cats. At a point where unprotected motors get too hot and start to burn out of existence, motors with Klixon Protectors save themselves by shutting off automatically. When dangerously overloaded, they simply stop to cool, then start again, either automatically or by manual reset.

If you are having trouble with motors burning out . . . or if you want to eliminate the delays, production stoppage, and cost of repairs and replacements caused by motor burnouts . . . insist on motors with built-in Klixon Protectors. Ask your supplier when you place your next order.

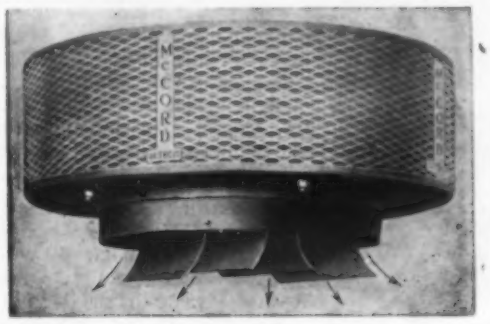
Since April 30th, the Army-Navy "E" pennant has been flying over our plant . . . our reward for furnishing the Air Corps with many types of automatic thermostatic controls.

KLIXON

SPENCER THERMOSTAT CO., ATTLEBORO, MASS.

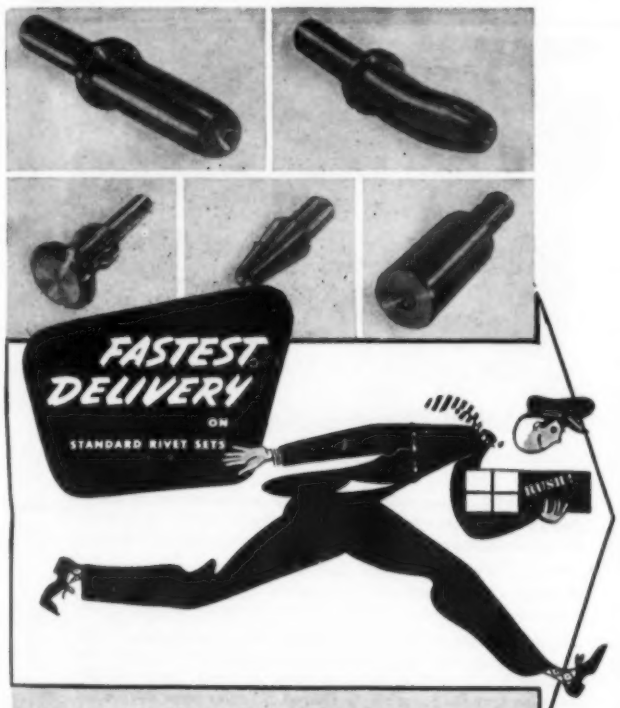
▲ Mention Item NED-3677 when writing ▲

A UNIT HEATER FOR HIGH AND WIDE BUILDINGS



These heaters solve the problem of heating high and wide buildings, such as warehouses, factories, hangars, and garages. The effective distribution of heat from these units permits each heater to adequately service a large area. Every improvement that engineers and the experience of many users is incorporated in the 1942 models. The circular construction is particularly adapted to the copper spiral fin tube construction because the shape and design of the fin creates an air turbulence without undue restrictions. Fins and tubes are metallically bonded to the copper tubes making a highly effective permanent union that maintains contact at high temperatures, providing extra good heat transfer capacity. Due to the careful design a new degree of quietness has been attained with the result these heaters are being used on installations not previously considered adaptable. New catalog includes complete specifications. Write: McCord Radiator & Mfg. Co., Detroit, Michigan. —Advt.

▲ Mention Item NED-3678 when writing ▲



Expanded facilities and improved production procedure enable Aero Tool Company to offer what we believe to be the fastest delivery on standard rivet sets available in America today. Send for 44-page illustrated catalog (on your firm letterhead, please).

AERO TOOL CO.
233 WEST OLIVE AVENUE, BURBANK, CALIFORNIA • CABLE ADDRESS AERO

▲ Mention Item NED-3679 when writing ▲

THE BIG NAME IN SMALL TUBING

Superior

SEAMLESS TUBING

SUPERIOR FOR FINE SMALL TUBING

SEAMLESS IN A COMPLETE RANGE OF METALS FROM 5/8" OD DOWN

Carbon Steels
Alloy Steels & Tool Steels
"Monel" and "Inconel"
Copper
Aluminum
Nickel

Superior Seamless is recognized as the standard of quality in fine small tubing (5/8" OD to and including .0025" OD).

Featuring:—smooth clean surfaces inside and out—rigid adherence to Temper and dimension requirements—a wide variety of analyses cold drawn.

Write for more specific information.

SUPERIOR TUBE CO. NORRISTOWN PENNSYLVANIA

"For fine small tubing" in Seamless and other Types and various Metals

▲ Mention Item NED-3680 when writing ▲

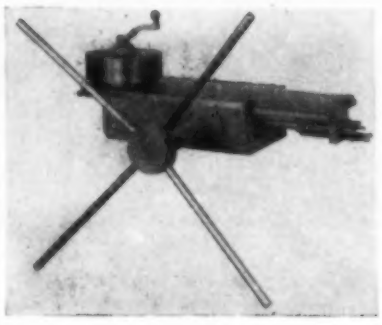
METAL WASHING MACHINE

Designed for use by metal fabricators whose production rates do not warrant installation of large, fully automatic washing equipment, this portable washing machine cleans wide range of large and small metal parts. Small parts are handled in bulk in baskets. Large parts are washed individually on lower platform or may be hung on racks in solution.

Parts to be cleaned may be either soaked and agitated or sprayed with cleaning solution by means of pump and spray gun or both. Several types of cleaning solutions may be used. Machine is equipped with immersed electric heating units for hot alkaline solutions. Unit is available in three sizes. Made by Washing Machine Div., Magnus Chemical Co., Dept. NED, 13 South Ave., Garwood, N. J.

▲ Mention Item NED-3681 when writing ▲

LATHE TURRET ATTACHMENT



Engine lathes can be quickly converted into hand screw machines through use of this turret attachment. It is made in variety of models to fit any size and make of lathe and is installed on ways by simply removing tailstock. Base, which clamps to lathe bed, is normalized and machined.

All gears and racks are fabricated from alloy steels and are of standardized design, facilitating replacement. Six station turret has automatic adjustable stops and is furnished blank so as to permit perfect alignment by boring on assembly. Made by United Industries, 8344 Second Blvd., Detroit, Mich.

▲ Mention Item NED-3682 when writing ▲

PLASTIC REDUCING COUPLING

Added to standard line of plastic fittings for use with Saran tubing, Saran plastic reducing couplings are available with 1/8-inch reduction for all sizes of tubing from 3/4 to 1/8 inch in diameter. This fitting will increase applications of tubing systems made of plastics and is adaptation of standard union coupling. It offers same characteristics of strength, chemical resistance, flexibility of application and performance as tubing. Made by Commercial Plastics Co., 201 N. Wells St., Chicago, Ill.

▲ Mention Item NED-3683 when writing ▲

Easy to Operate

Streamlined for Self-Cleaning

Automatic electric-motor operated American Standard Valve with hand wheel for manual operation in case of current failure. Available in 125 lb iron, 150 to 900 lb steel.

R-S QUALITY PRODUCTS SINCE 1904 — 15 to 900 psi

16-inch cast iron chain wheel operated valve for pressures up to 15 pounds. Complete range of sizes from 2-inches to 84-inches.

The action of an R-S Butterfly Valve is rapid and smooth. Four to six revolutions of the hand wheel or chain wheel fully open or close the valve vane. The compact, inherently narrow face-to-face dimensions, and the fact that there is no long stem or gate well, reduce clearance requirements to the minimum.

There is free passage for direct flow with no restrictions other than the streamlined vane. Sediment cannot collect since there are no right angle bends or reverse turns. Hence, the R-S Valve is ideal for the control and shut-off of dirty gas, dirty water, pulverized fuel or similar flowing solids.

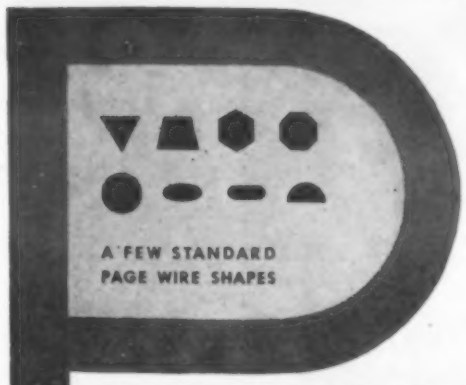
The beveled vane wedges tight against the valve body for shut-off duty.

Write for catalog and detailed information about the use of R-S metals for resistance against heat, abrasion and corrosion.

VALVE DIVISION
R-S PRODUCTS CORPORATION, 4527 Germantown Avenue, Philadelphia, Pa.

R-S Streamlined BUTTERFLY VALVES

▲ Mention Item NED-3684 when writing ▲



HOW CAN PAGE HELP YOU WITH SHAPED WIRE?

Currently, the PAGE mills are practically at capacity producing Shaped Wire for the direct use of the armed forces and for war production. That is the way it must be until the job is done.

However, the fact that PAGE cannot deliver product to you for civilian use now, should not keep you from taking advantage of the experience of our organization with the production and use of Shaped Wire. Remember, wire has always been the business of PAGE and if we can help with any of your problems, we will be glad to do so.

Certainly if you are planning products for after-war production, we would be happy to work out details with you.

PAGE SHAPED WIRE

PAGE STEEL AND WIRE DIVISION
Monessen, Pa., Atlanta, Chicago, New York, Pittsburgh, San Francisco, Portland
In Business for Your Safety

ACCO
AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

▲ Mention Item NED-3685 when writing ▲

"Harper Bolts don't rust. They're tough and they'll make this pump last a lot longer."

Yes . . . the non-ferrous and stainless fastenings made by Harper are adding extra toughness and extra service-life to vital parts of ships, tanks, jeeps, planes and other war equipment. Also in hundreds of war production jobs they are preventing failures of vital equipment and keeping production rolling. They have high tensile strength; they resist rust, corrosion, many acids and alkalies and other tough conditions.

4320 STOCK ITEMS . . . of bolts, nuts, screws, washers, rivets and accessories in the non-ferrous and stainless alloys.

WRITE FOR CATALOG . . . and reference book—80 pages—4 colors—193 illustrations—numerous tables and other data. Free when requested on a company letterhead.

THE H. M. HARPER COMPANY
2628 Fletcher Street, Chicago
EASTERN BRANCH: 45 West Broadway, New York City
Offices in principal cities

ARMY E NAVY

HARPER *Chicago*
EVERLASTING FASTENINGS

BRASS • BRONZE • COPPER • EVERDUR
MONEL • STAINLESS

▲ Mention Item NED-3686 when writing ▲

The Sabin Way Saves Labor!

Type L-3

THE SABIN TRUCK MAKES IT EASY FOR ONE MAN, WITHOUT HELPERS, TO LIFT AND TRANSFER DRUM OR BARREL LOADS UP TO 800 POUNDS.

Exclusive Third-Wheel Feature provides foot pedal for easy break-over, insures better load support and balance, and permits loaded truck to stand alone.

WRITE FOR FREE BULLETIN, showing all types.

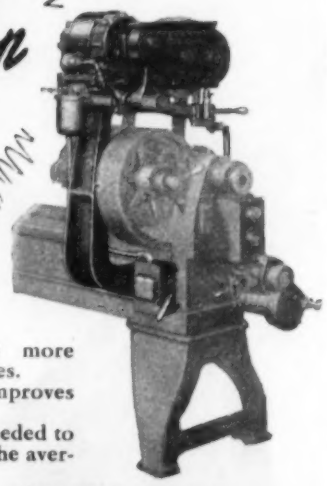
THE SABIN MACHINE CO.
6536 Carnegie Ave., Cleveland, O.

SABIN
One-Man BARREL TRUCK

▲ Mention Item NED-3687 when writing ▲

CULLMAN
MACHINE DRIVES

increase production



Modernizing over-head drive equipment with Cullman Machine Drives permits a better utilization of shop space and provides more efficient operation of machines.

At the same time it vastly improves working conditions.

Only four bolt holes are needed to attach the Cullman Drive to the average lathe.

CULLMAN WHEEL CO.
1333 Altgeld Street, Chicago

▲ Mention Item NED-3688 when writing ▲

JOB TIME REDUCED FROM TEN MINUTES TO THIRTY SECONDS WITH...

Walker-Turner Drill Heads..

THE compactness and flexibility of Walker-Turner Drill Heads makes it easy to design special tooling set-ups. An interesting application is shown here in the plant of William Mogey & Sons, manufacturers of precision optics. The customary method of rough grinding is shown in the lower illustration, this operation requiring ten minutes.

Two Walker-Turner Drill Heads assembled into an automatic machine completes the same operation in ten seconds. This is an indication of how Walker-Turner Drill Heads can be used in special tooling arrangements for intricate drilling, tapping, reaming and grinding operations. Such set-ups can be made quicker and at lower cost than by processes and methods formerly used. Prompt delivery of Walker-Turner Machine Tools is assured to war industries.

WALKER-TURNER COMPANY, Inc.
2773 Berckman Street, Plainfield, N. J.

CONSTRUCTION FEATURES

★ One Piece Head Casting. Precision bored to assure correct bearing alignment.

★ Six spline spindle runs on four precision ball bearings.

★ Pulley straddle mounted between bearings to eliminate spindle "whip".

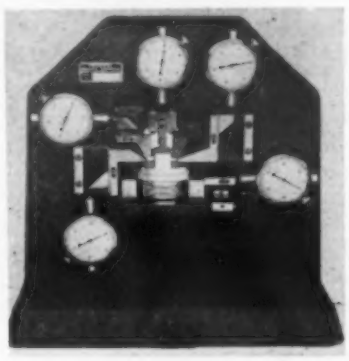
walker-turner COMPANY, INC. PLAINFIELD, N.J. U.S.A.

MACHINE TOOLS

DRILL PRESSES — HAND AND POWER FEED • RADIAL DRILLS
METAL-CUTTING BAND SAWS • POLISHING LATHES • FLEXIBLE SHAFT MACHINES
RADIAL CUT-OFF MACHINES FOR METAL • MOTORS • BELT & DISC SURFACERS

▲ Mention Item NED-3689 when writing ▲

PRECISION CHECKING GAGE



Five entirely separate dimensions on fuse body are checked simultaneously in single operation on this model 247 B-76 thickness, height and distance gage. Designed to conserve time, gage stands upright so that all dials are visible to operator as he sits at bench. Being entirely mechanical, equipment can be moved as required for convenience in use. Gage is first set to master. Fuse body is positioned for gaging easily on three support blocks. Movement of each sensitive contact is transmitted to dial indicator through pantograph unit. Made by **Federal Products Corp.**, 1 Reservoir Ave., Providence, R. I.

▲ Mention Item NED-3690 when writing ▲

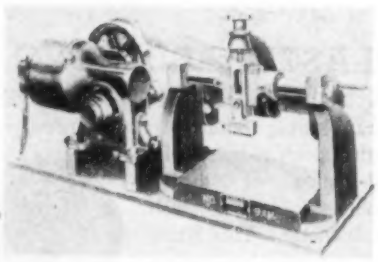
CARBON DRYING LAMPS

Applicable for drying, baking and dehydrating applications, this complete line of Nalco Dritherm carbon filament lamps produces infra-red rays. Included in line are inside silvered,

self reflector type and bull's eye silver type for diffusion and concentration of rays. Lamps are claimed to produce maximum of infra-red with minimum of visible light. Made by **North American Electric Lamp Co.**, 1026 Tyler St., St. Louis 6, Mo.

▲ Mention Item NED-3691 when writing ▲

MARKING MACHINE



Claimed to have doubled the production of hand operated units, 9AM marking machine is equipped with ¾-horsepower alternating current gear reduction motor unit which provides normal marking speed of 9, 18 or 36 strokes per minute. This power unit is so constructed that it can be used to motorize many standard types of hand marking machines by removal of hand lever and attachment of driving arm.

If operator is fast, part can be marked on each forward and one at each backward stroke. Machine operates on arm and slide principle and can be used with straight line flat type holder, as well as roller die marking and rotary holder. Made by **The Acromark Co.**, 7-11 Morrell St., Elizabeth, N. J.

▲ Mention Item NED-3692 when writing ▲

DINGS CROSS BELT MAGNETIC SEPARATOR

Provides Selective Separation of Dry Materials

As illustrated, material is carried on the main belt of this separator under a series of cross belts, above each of which there is a magnet pole. Magnetic particles are pulled upward and held fast to the under surface of the cross belts until carried to the side beyond the magnetic zone where they are discharged. Independent control of the intensity of each magnet is provided so that products of different magnetic susceptibilities can be discharged at each cross belt. One such machine for concentrating ilmenite incorporated eight separate magnetic zones, producing eight different magnetic products and one non-magnetic. This machine is used for concentrating or purifying a wide range of materials. Full details on request.

Dings Magnetic Separator Co.
520 E. Smith St., Milwaukee, Wis.

Dings MAGNETIC SEPARATION HIGH INTENSITY

▲ Mention Item NED-3693 when writing ▲

Never a Flaw—
Clevelands Stand Guard!

Standards are high on a popular material made by an old-established customer of ours. Even a slight variation in the speed of the production equipment could ruin a whole batch. But Clevelands drive the machines at uniform rate, eliminating defects.

Our customer's confidence in Cleveland Worm Gear Speed Reducers goes back 20 years. He operates his plant 24 hours a day—says his Cleveland Drives are a big factor in maintaining continuous production and preventing shutdowns—and adds:

"We have tried other makes of reducers but they do not stand up. We accept your Engineers' recommendations and —we do not have any trouble with your equipment."

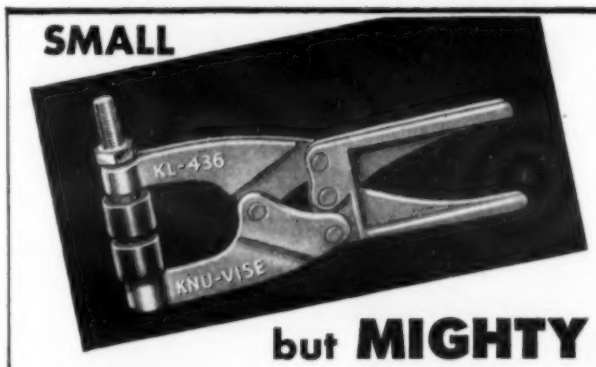
You can accept our Engineers' recommendations, too!

THE CLEVELAND WORM & GEAR COMPANY
3283 East 80th Street • Cleveland, Ohio
Affiliate: The Farval Corporation, Centralized Systems of Lubrication.
In Canada: PEACOCK BROTHERS LIMITED

CLEVELAND WORM GEAR Speed Reducers

▲ Mention Item NED-3694 when writing ▲

SMALL



but MIGHTY

Small Portable Hand Pliers
Exert 800 P. S. I.

In spite of the diminutive size and 3 ounce weight of these pliers it takes only a normal person's grip of the handle to exert the astounding pressure of 800 lbs. per square inch at the jaws.

That is why this Model KL 436 has become so popular among aircraft manufacturers. Its small size coupled with its almost unbelievable performance lifts it above the average plier.

Knu-Vise Toggle Action Clamping Fixtures save time. They do not require the time-consuming operation of adjusting the pressure for each clamping operation by hand. Once set, the pressure spindle remains in a fixed position until the entire clamping job is completed. The pliers are handled as simply as regular pliers.

Knu-Vise Pliers range in throat capacity up to 5½ inches.

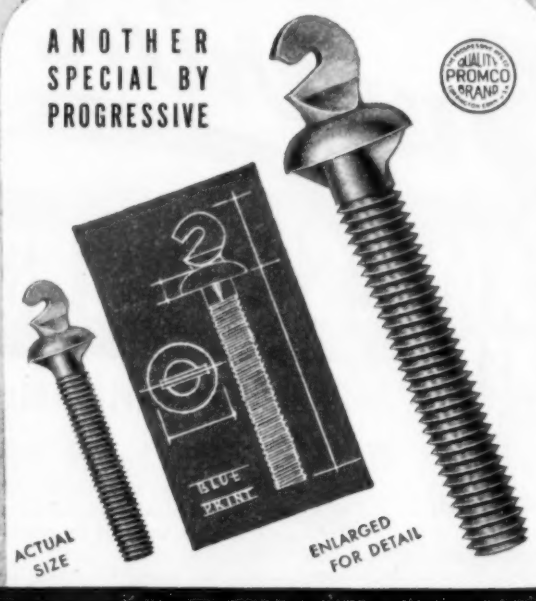
Our broad experience in engineering methods for holding parts or assemblies for various operations is at your command.

KNU-VISE INCORPORATED
2212 Eighth St., Detroit, Mich.
4328 San Fernando Rd.
Glendale, Calif.

▲ Mention Item NED-3695 when writing ▲

ANOTHER SPECIAL BY PROGRESSIVE

QUALITY PROMCO BRAND



FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

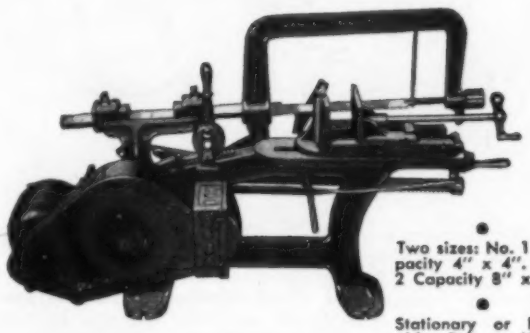
For special heads, threads, finishes, etc. — on fastenings of any metal or alloy adapted to cold-upset—depend on Progressive. 25,000,000 is our weekly output; customer satisfaction our daily achievement.

The PROGRESSIVE MFG. CO.
TORRINGTON · · · CONNECTICUT

▲ Mention Item NED-3696 when writing ▲

MARVEL SAWS

This straight cutting, general purpose saw will give you dependable, trouble-free service. That is why 80% of the shops small dry cutting general purpose saws are MARVELS.



Two sizes: No. 1 Capacity 4" x 4". No. 2 Capacity 8" x 8".

Stationary or Portable, Belt or Motor Drive

All models have automatic stop and sturdy vise. Frames slide in V-bearings with adjustments for taking up wear.

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave., Chicago, U. S. A.
Eastern Sales Office:
225 Lafayette St., New York

▲ Mention Item NED-3697 when writing ▲

V-BLOCKS

CHALLENGE V-BLOCKS

For supporting shafts and other cylindrical work when drilling, checking, inspecting or layout, etc. Made of fine-grained, semi-steel castings, precision ground to .0005 inch. Five sizes.

★ PARALLELS: Box or solid. Made from highest grade special analysis semi-steel. Precision ground.

★ ANGLE PLATES: Provide practical and versatile method of clamping and holding work. Precision ground. 21 sizes.

★ SURFACE PLATES: A true surface for toolmaking, inspecting and testing. No give or sag under load. Many sizes.

WRITE FOR FULL DETAILED INFORMATION.

THE CHALLENGE MACHINERY CO.
Main Office and Factory: GRAND HAVEN, MICH. 1893 50th ANNIVERSARY 1943 Eastern Sales Office: 50 Church St., NEW YORK

▲ Mention Item NED-3698 when writing ▲

No Shortage of IDEAL RECHARGEABLE STORAGE BATTERIES for FLASHLIGHTS

Make sure of a future battery supply for your flashlights, with Unrestricted IDEAL Rechargeable Storage Batteries. They can be recharged again and again at convenient intervals, thus providing an "always fresh" battery, and a bright, steady, dependable light . . . Conserve Critical Materials.

Outlasts 400 Dry Cells!

With one IDEAL Rechargeable Storage Battery in heavy service, as much as $10 a year can be saved on each flashlight. IDEAL Storage Batteries fit any standard size flashlight cases using 1¼" size D dry cells. Many thousands in use in leading utility and industrial plants. Chargers for recharging the IDEAL Battery available in 1, 6 or 12-cell sizes.

Prompt Deliveries.

Write for Bulletin FBB 1242

GUARANTEED
IDEAL Sycamore
★ IDEAL COMMUTATOR DRESSER CO ★
1032 Park Avenue Sycamore, Illinois
Sales Offices in all Principal Cities

▲ Mention Item NED-3699 when writing ▲

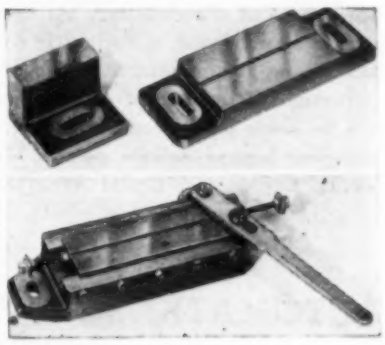
SHIP FRAME BENDER

Completely enclosed and self-contained, this portable ship frame bender has overhead swivel connection to power source, thus eliminating clumsy hose connection to central accumulator. Machine is mounted on wide, swivel casters so that it can be moved easily about on deck or on ways.

Frame bender is equipped with either alternating or direct current 3-horsepower motor. Entire unit measures 2 feet, 7 inches from handle to handle, with overall height of same dimensions. Piston, which is 6½ inches in diameter, is provided with cast iron piston rings. Ram has stroke of 10 inches. Machine weighs 1,100 pounds. Made by **Watson-Stillman Co.**, P. O. Box 26, Roselle, N. J.

▲ Mention Item NED-3700 when writing ▲

MILLING FIXTURE SETUPS



Use of several fixture setups makes Rouse hand miller fully productive on short notice and at minimum cost. These set-ups eliminate need for most preliminary tooling usually necessary in making completed fixtures.

Illustrated is angle plate set-up, with 3/16-inch keyway on bottom surface and flat set-up with 3/16-inch keyway on bottom and top giving adjustment from front to back and sideways. Bottom illustration shows stationary base plate with sliding table. Base plate has 3/16-inch keyway on bottom. Sliding table has adjustable stops at both ends and movement of 3½ inches with lever feed. Movement can be adjusted from left to right. Made by **H. B. Rouse & Co.**, 2212-D North Wayne Ave., Chicago, Ill.

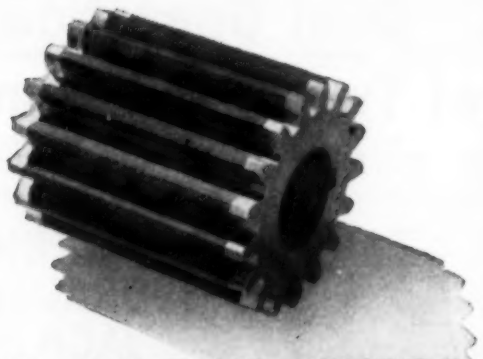
▲ Mention Item NED-3701 when writing ▲

SPRING TYPE RETAINER

Eliminating need for drilling and riveting, Soloc retainers are easily secured in place by spot welding and Dzus type springs can be quickly snapped into place. Only hammer and screwdriver are required.

Maintenance is simplified. Springs which are broken by vibration and stress can be removed with pliers and new spring inserted. In previous fasteners it was necessary to remove entire assembly to replace spring. Retainers are claimed to be approved by U. S. Army Forces. Made by **Solar Aircraft Co.**, Dept. SR-11, 1212 W. Juniper St., San Diego, Calif.

▲ Mention Item NED-3702 when writing ▲



G-E FABROIL GEARS

The application of plastic materials to machines has done much to reduce objectionable noises which arise from gear trains. In clock mechanisms, automobile timing gears, variable speed transmission machine drives, and gear reductions of every description, nonmetallic Fabroil gears are introduced for their noise reducing qualities. Fabroil gears are 30 to 40 times as resilient as steel, permit tooth deflections which absorb vibrations, are strong, tough and long wearing. They operate at their best when alternated in a gear train with metal gears. For further information write Section J-7, One Plastics Ave., Pittsfield, Mass.

PD-47

PLASTICS DIVISIONS
GENERAL ELECTRIC

▲ Mention Item NED-3703 when writing ▲

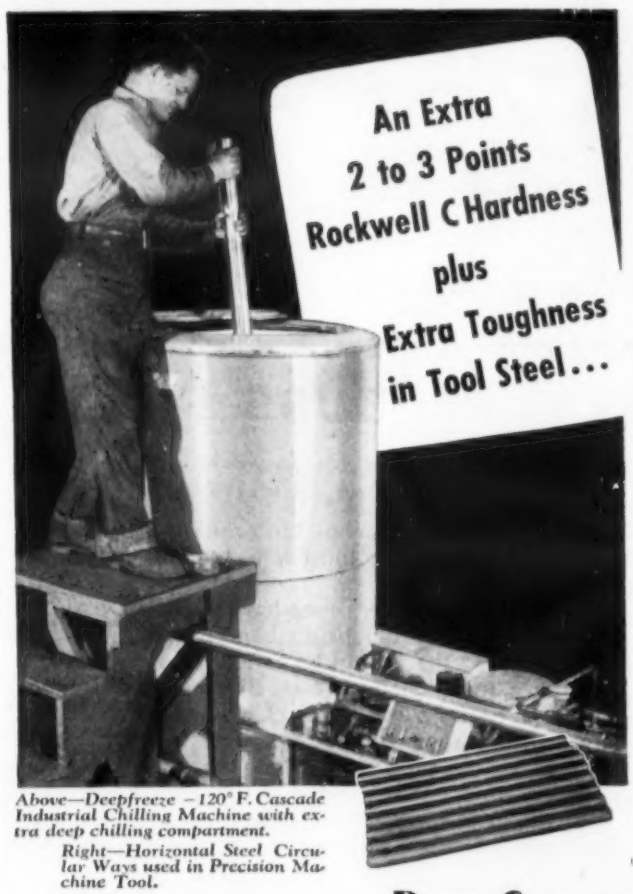
Free NEW FOLDER HELPS "KEEP 'EM HOISTING"!

WRITE FOR YOURS NOW!

This new folder, carefully prepared by R & M Hoist engineers, will enable you to *prevent* breakdowns that might hamper production. In addition to providing complete, practical information on the various phases of maintenance, it is designed to serve as a *permanent* file for your hoist parts lists, diagrams, instruction sheets, etc. Write to:

ROBBINS & MYERS, INC.
HOIST & CRANE DIVISION, SPRINGFIELD, OHIO

▲ Mention Item NED-3704 when writing ▲



Above—Deepfreeze −120° F. Cascade Industrial Chilling Machine with extra deep chilling compartment.

Right—Horizontal Steel Circular Ways used in Precision Machine Tool.

...by Cold-Treating in a Deepfreeze
INDUSTRIAL CHILLING MACHINE

● A prominent machine tool manufacturer obtains an extra 2 to 3 points Rockwell C Hardness in S.A.E. 4615 steel horizontal circular ways by cold treating in a Deepfreeze −120° F. Cascade Industrial Chilling Machine. By regular heat treating, 57 to 60 Rockwell C Hardness is obtained. Chilling in a Deepfreeze Machine at −100° F. results in an average of 60 to 62 Rockwell C Hardness.

In addition, the straightness of the bar is not distorted by cold treating which was the case in further normalizing operations that were previously used.

TECHNICAL DATA

Part — Horizontal Way 2½" dia. x 36" long.

Material — S.A.E. 4615 steel. Weight, 46 lbs.

Number per Load—12.

Operation —Deepfreeze at −100° F. to obtain additional hardness.

Result—After heat treating, 57 to 60 Rockwell C hardness was obtained. After Deepfreeze, 60 to 62 Rockwell C hardness is accomplished. In addition, cold chilling did not affect the straightness of the bars which was the case with heat normalizing.

Free Engineering Assistance

Deepfreeze engineers are available to assist you in obtaining the advantages of cold treating. Send an outline of your problem together with parts or prints for a preliminary analysis and test. There is no obligation.

Free Additional Information

For additional information on Deepfreeze equipment send for free copy of bulletin with complete details, specifications and listing other uses.

Deepfreeze
Division of Motor Products Corp.
2316 Davis Street, North Chicago, Illinois
Detroit, Michigan

▲ Mention Item NED-3705 when writing ▲

STANLEY Sanders and Grinders

Heavy duty, powerful tools built for toughest production and repair work. Compact, balanced design makes them easy to handle. Full seal type ball bearing construction keeps the precision spiral bevel gears in permanent alignment. Wood handle can be used on either side of tool.

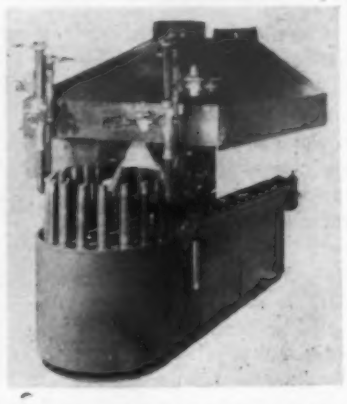
Long-life tools in every respect. Use these tools for fast, efficient sanding, grinding, buffing and surfacing on wood, metal or concrete. Ask your Stanley distributor for demonstration, or write for literature. Stanley Electric Tool Division, The Stanley Works, New Britain, Conn.

1843 STANLEY 1943

STANLEY ELECTRIC TOOLS
"A COMPLETE LINE FOR INDUSTRY"

▲ Mention Item NED-3707 when writing ▲

CARTRIDGE CASE ANNEALER

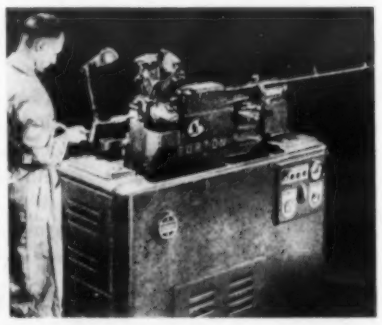


Amplifying capacity of original flame type mouth and body annealing machine for 20-millimeter steel cartridge cases, this line of equipment now includes model 3740 for 37 to 40-millimeter cases; model 5710 for 57, 75 and 105-millimeter cases and model 390 for 90-millimeter and 3-inch anti-aircraft cases. Production of machines varies from 400 to 2000 cases per hour. Steel conveyor chain carries shell cases mounted on revolving spindles through heating and holding zones. Variable speed drives for conveyor and for each rotating spindle affords exact control over annealing cycle. Burner equipment is of blast line type with zero governors and proportional mixers. Manometers permit duplicating of burner settings. Burners are adjusted and arranged to provide holding or soaking zone, in addition to heating zone.

Burner equipment may be furnished with height adjustments when cases of different sizes are to be handled in one machine. Loading and unloading is continuous manual operation at one end of machine. Cold blast blower can be incorporated in equipment when close control of temperature in lower part of cartridge case is necessary to prevent annealing beyond definite point. Made by **Morrison Engineering Corp.**, 5005 Euclid Ave., Cleveland, O.

▲ Mention Item NED-3709 when writing ▲

AUTOMATIC SCREW MACHINE



Mass production of small, close tolerance parts is possible with this No. 16-A precision automatic screw machine which is improved American version of Swiss Peterman No. P-7 machine. Tooling, vital parts and attachments of both machines are interchangeable.

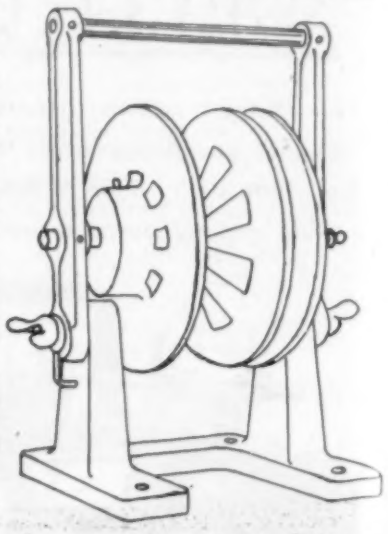
Machine is particularly adaptable to turning pinions, shafts, screws, and small, slender parts used in clocks, meters, radio equipment, precision instruments, guns and aircraft engines. Parts ranging in diameters from 0.005 to 7/16 inch and lengths from 1/32 to 2¾ inches can be produced. In addition to step and contour turning, machine with attachments automatically performs centering, drilling, threading and slotting operations.

Attachments provide for wide variety of machining operations. Complete cam and tool service is offered for users of these machines. Centralized finger-tip control permits full control over machine at all times. Equipment includes coolant system, Productimeter counter, adjustable lamp, stock supply signal and handle service light. Made by **George Gorton Machine Co.**, 1103 Thirteenth St., Racine, Wis.

▲ Mention Item NED-3710 when writing ▲

VARIABLE SPEED TRANSMISSIONS

Completely new and thoroughly proven are Toledo variable speed transmissions with ratios of from 1 to 1 to 10 to 1, for fractional to 3.5 horsepower drives. Made in two sizes and four forms, they are low in price and deliver positive speed control.



Available either completely assembled, with or without belts: with a thrust bearing for vertical mounting; or wheel assembly only for special machine design applications.

Field of application is practically unlimited. They are being applied to machine tools and other drives in numerous industries. They may be mounted in any position for either straight line or angle drive.

Important features include: ease of installation; compact size; sturdy construction; correct design to eliminate belt wear; infinite speed selection of stepless speed changes; speed change without stopping; oversize bearings; interchangeable parts; noiseless operation; and can be used with any size motor.

If you have a variable speed requirement, for either a complete variable transmission unit or variable wheel assembly only, let us show you how you can improve your product at a considerable saving. **The Toledo Timer Co.**, 2224 Albion St., Toledo, O. —Advt.

▲ Mention Item NED-3712 when writing ▲

"We avoid many delaying interruptions of electrical service—since we installed **BUSS FUSES**"

Says Pan American Engineers, Pan American Airways System, New York, N. Y.

"In flying, failures of any kind cannot be tolerated. Every part of the ship must function correctly at all times.

"After long experience we have found BUSS fuses give dependable protection when needed — yet they prevent blows that might be called needless.

"Hence, in our planes we use BUSS Aircraft fuses—and in our shops and hangars we use BUSS Super-Lag fuses because we have found that they likewise save us many delaying interruptions of electrical service.

"BUSS fuses have always measured up to the high standards of protection we have set here at PAN AMERICAN."

You, too can eliminate the costly nuisance of "false alarm" blows

Pan American's experience is typical of thousands of others, which proves that it isn't necessary to suffer from useless shutdowns caused by needless opening of protective devices. Properly installed BUSS fuses can be forgotten.

They require no maintenance or periodic inspection. They don't open needlessly. If one opens, you know there is some fault that needs correction.

To get this kind of protection in your own plant, pass the word along that all records calling for protective devices should immediately be changed to specify BUSS Super-Lag Renewable Fuses.

Then as fuses are replaced or new installations made, your plant will automatically get the benefit of this carefree trouble proof protection.

BUSSMAN MFG. CO.
University at Jefferson, St. Louis, Mo.
Division McGraw Electric Company

BUSS Super-Lag FUSES
Sold through wholesalers

▲ Mention Item NED-3708 when writing ▲

Dual Operation of Two Speed Pumps

is an outstanding and exclusive feature of this 30 ton capacity model

HEIN-WERNER HYDRAULIC JACK

- **Super-Powerful**
- **Easy-Operating**

Available for quick delivery to plants doing war work . . . Other models 3 to 20 tons capacity. For details consult your nearest industrial supply distributor or write us.

HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

HEIN-WERNER HYDRAULIC JACKS
Are Built Right and Priced Right

▲ Mention Item NED-3711 when writing ▲

DO YOU HAVE A BRAZING FLUX PROBLEM?

INVESTIGATE SCAIFLUX 21

Providing many practical advantages that speed and simplify brazing practice and bring better results, Scaiflux 21 is the answer to many vexing brazing problems. It has been amply tested in production work, and found admirably suited for industrial use.

Write for Descriptive Folder

SCAIFE COMPANY
OAKMONT, PA.

▲ Mention Item NED-3713 when writing ▲

Portable Conveyors are handling thousands of tons of coal for homes, for industries and for the armed services. All sizes and models for stacking and piling plus the Portable Under-car Unloader for quick transfer from car to stacker. Write for details.

ARMY E NAVY
Awarded Feb. 8, 1943

Farquhar

PORTABLE MACHINERY DIVISION
A. B. FARQUHAR CO., Limited . . YORK, PENNA.

▲ Mention Item NED-3714 when writing ▲

Northern
HI-LIFT ELECTRIC HOISTS
168-Hour Week Workers

They stay on the job because they have the strength and construction quality. One piece welded frames—turned and ground shafts—large size roller bearings—machine cut heat treated gearing—splash lubrication. All parts readily accessible for maintenance that usually isn't needed.

Hi-Lift feature makes better use of headroom—capacities 1000 lbs. to 15 tons.

Low Headroom

Write for Literature

NORTHERN ENGINEERING WORKS, 2607 Atwater St., Detroit, Mich.

CRANES *Northern* HOISTS

▲ Mention Item NED-3715 when writing ▲

This Man is Building Plywood Airplanes with a HANSEN ONE-HAND TACKER

APPLICATION of plywood in airplane construction is speeded up and simplified with the HANSEN one-hand TACKER. It tacks plywood strips in place prior to molding process. Strips are placed at an angle across a mold, tacked in position and then molded into a solid unit.

Besides bombers, trainers and gliders, plywood is used for making torpedo deck housings, army reconnaissance vehicles, gun stocks, etc. Wherever plywood strips are tacked in place—in fact, wherever tacking or fastening is done—HANSEN TACKERS are used to save materials—time—steps. What are your problems?

ASK FOR FOLDER 31-T

HANSEN A.L. HANSEN MFG. CO.
5164 RAVENSWOOD AVE. CHICAGO, ILL.

▲ Mention Item NED-3716 when writing ▲

A WARNING LIGHT

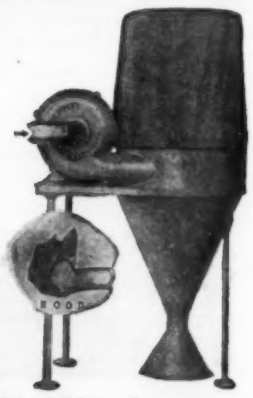
Should not be ignored

DUST BREATHING IS DANGEROUS

LEIMAN BROS.

DUST COLLECTOR

Individual motor driven units for surface grinders, double end grinders, saws, sanders, etc.



LEIMAN BROS. INC.
167-1 Christie St.
Newark, N. J.

▲ Mention Item NED-3717 when writing ▲

COMMUNICATION SYSTEM

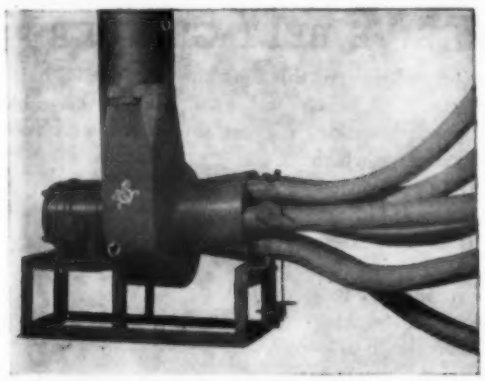
Of improved design, this central control master station is now equipped with annunciator selector having buzzer and name tabs which illuminate to identify incoming calls. Built into detachable base which can be easily replaced with larger capacity selectors for future system expansion, this unit enables user to talk individually to up to 11 other remote stations or page them all simultaneously.

Each name tab lights up to identify incoming calls and remains illuminated until call is received. Manual buzzer can be cut off during conversations. Tone signal unit may be used for calling other stations. Made by **Executone, Inc.**, Dept. C, 415 Lexington Ave., New York City.

▲ Mention Item NED-3718 when writing ▲

FUME EXHAUSTER

Adaptable for use in shipholds, welding rooms, tunnels, vaults and basements, this fume exhauster has centrifugal type blower wheel made of ⅛-inch steel. Three horsepower ball



bearing motor is tested to overload capacity to meet all rough usages to which blower of this type is subjected.

Frame work is welded into strong unit with handles for carrying. Fumes, gases, dust, filings and grinding compounds do not come in contact with motor. Adapters are interchangeable and can be used for suction or blowing as desired. Made by **Chelsea Fan & Blower Co.**, 1208 Grove St., Irvington, N. J.

▲ Mention Item NED-3719 when writing ▲

WRINKLE FINISHES

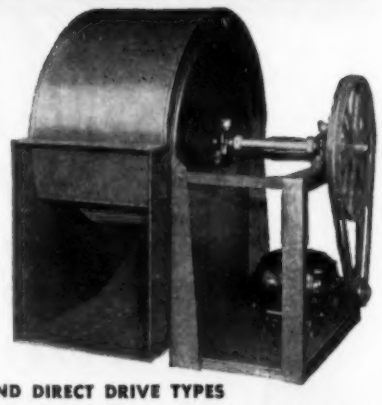
Containing no Chinawood oil, this line of wrinkle finishes closely resembles standard wrinkle finishes, the manufacture of which is now restricted by government order because of Chinawood oil shortage. New finishes form hard, durable coatings, cover rough metal surfaces effectively in single coat, and are applied in regular wrinkle patterns by same methods, it is claimed. They are obtainable in full range of colors. Made by **Maas and Waldstein Co., 438 Riverside Ave., Newark, N. J.**

▲ Mention Item NED-3720 when writing ▲

AIR, TOO, MUST WORK FOR VICTORY
KEEP IT MOVING WITH
Peerless VENTILATING SETS

★ Mess halls, army barracks, war service buildings and industrial plants require the movement of air for ventilating, cooling, heating or complete air conditioning.

These situations demand ventilating fans that not only measure up to capacities rated on the test floor, but which will also deliver the rated air volumes under practical operating conditions. Peerless Utility Ventilating sets are just such units.



BELT AND DIRECT DRIVE TYPES

Peerless Ventilating Sets are supplied in 26 belt-driven sizes and 12 direct-connected sizes. Belt-driven units are powered with from ½ to 7½ horsepower motors. Direct-driven units have ½ to 2 horsepower motors. Belt drive units are also furnished with variable pitch motor sheaves for speed adjustment.

All units can be supplied with or without weatherproof hood covers for drive mechanism.

Write for Bulletin SDA-91, which gives complete dimensions and ratings of Peerless Utility Blowers.

THE PEERLESS ELECTRIC CO.
WARREN, OHIO
FIFTIETH ANNIVERSARY
FROM Pearl Harbor TO VICTORY

▲ Mention Item NED-3721 when writing ▲

NIAGARA
AERO HEAT EXCHANGER

Increases production with better cooling
Saves space and equipment
Cuts cost of water cooling

● A WATER SAVER, using the evaporative cooling principle to maintain ideal temperatures and hold them uniform by constant control. Successfully used in

- . . . *all water-jacketed equipment or engines*
- . . . *quenching water, oils or compounds*
- . . . *lubricants and coolants in machining*
- . . . *air or gas compressors, jackets, inter and after cooler*
- . . . *cooling electronic sets, welders, vacuum tubes, transformers, electric induction heaters*

Saves piping, pumping and maintenance cost of large water systems; costs less to install; saves 95% of cooling water. Provides closed system free from contamination. Provides heating when needed. For Bulletin, address Department ED-73.

NIAGARA BLOWER COMPANY
6 E. 45th Street, New York City
District Engineers in Principal Cities

▲ Mention Item NED-3722 when writing ▲

1 Man's Fingertips Do 3 Men's Work!

CRESCENT "NCRE" HIGH LIFT TRUCK

(4,000 to 6,000 pounds capacity)

There is a Crescent Tractor, Load Carrier or Elevating Truck to meet your every need.

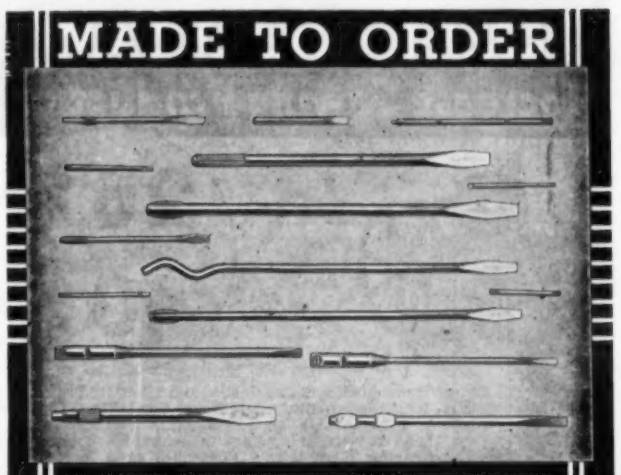
THE precision "fingertip" control of the Crescent "NCRE" permits one man to handle as much material as three—releases two men for the production line. This truck is self-loading with both high and low lifting and can be used for trailing loads. The standard 60" lift (overall height, 81") will operate successfully inside a standard box car. Write today for full specifications.

CRESCENTIZE YOUR HANDLING

CRESCENT TRUCK COMPANY
1050 Willow St. - Lebanon, Pa.
Industrial Truck and Tractor Specialists for More Than 25 Years

▲ Mention Item NED-3723 when writing ▲

MADE TO ORDER



Screw driver blades to order for assembly in any type of handle, wooden, composition or plastic.

Points in either keystone or cabinet type. Edge of point carefully made and of uniform thickness.

Shanks are winged, fluted, formed or milled, as shown.

Blades furnished in plain finish, blued or nickle plated.

The Torrington Company
SPECIALTY DEP'T.
Torrington, Conn., U.S.A.

▲ Mention Item NED-3724 when writing ▲

Send for A Copy of this Helpful Booklet

IT'S just what the name implies—"Facts about Metal Polishing", 39 pages of useful information. Typical chapter subjects are: Preparation of Glue, Types of Polishing Wheels, Setting Up Polishing Wheels, Setting Up Abrasive Belts, Correct Drying, Factors of Efficient Polishing.

Today, when it's absolutely necessary to get maximum service from your abrasive, this booklet is doubly valuable. Write for a copy today—no charge nor obligation. Just ask for Form 1340NE.

NORTON COMPANY, WORCESTER, MASS.

G-140

NORTON ABRASIVES

▲ Mention Item NED-3725 when writing ▲

BREATHING HAZARDS?

CONSULT PULMOSAN!

Photo Courtesy Hercules Powder Co.

Getting the right respirator for your needs—and getting it when you need it, is important in today's rush war production. Pulmosan can take care of you on both counts. In the extensive line of Pulmosan Respirators are types and styles for EVERY breathing hazard—ready for prompt shipment to war plants.

Submit your breathing problems to our engineers. Let them recommend and supply the correct Pulmosan Respirator for your particular conditions. Write for booklet showing full line of Pulmosan Respirators. Pulmosan Safety Equipment Corp., Dept. NED, 176 Johnson St., Brooklyn, N. Y.

PULMOSAN RESPIRATORS

FOR DUSTS, FUMES, GASES, SMOKE, SPRAYS

▲ Mention Item NED-3726 when writing ▲

FOLEY FILED SAWS

Increase Sawing Production

25% TO 40%

Your saws will cut faster and truer and stay sharp longer when filed on a Foley Saw Filer. The exclusive patented Foley jointing principle straightens up uneven teeth and makes them perfect in size, shape, spacing. That is why Foley-filed saws increase sawing production 25% to 40%. The Foley also cuts down filing time, saves on files and reduces saw breakage. The Foley Filer is the only machine that sharpens cross-cut circular saws 3" to 24" in diameter, band saws ⅛" to 4½" wide—all hand saws.

FOLEY AUTOMATIC SAW FILER

FILING SAWS FOR VICTORY

The Foley Filer is in use by U. S. Navy for shipyards, air bases, battleships, navy tenders — by U. S. Army posts and airports—by U. S. Engineers, Light House Dept., Treasury, Mint, Federal Penitentiaries,—also hundreds of war and industrial plants.

30-DAY TRIAL

Find out on your own work how much the Foley Filer can save you. We will send it on thirty days' trial. Send for details today.

FOLEY MFG. CO., 23 Second St. N. E., Minneapolis 13, Minn.

Send full details of your 30-day Trial Offer on the Foley Automatic Saw Filer.

NAME .....

ADDRESS .....

▲ Mention Item NED-3727 when writing ▲

PHOTOELECTRIC PROTECTION

Projecting fence of invisible light over distances as great as 1500 feet, photoelectric protection system gives instant local or central station alarm if intruder enters protected area. Designed to meet government requirements, equipment is especially suited to protection of harbors, yards, docks, industrial properties, airports and similar large areas.

In operation, type L60M is aligned with type A30M to which it focuses modulated beam of infra-red light. If invisible infra-red light is not required, operating range of system exceeds 2000 feet. Within light source, fan driven by gearless, brushless motor serves as light chopper to produce rapidly fluctuating light of desired frequency and also cools heavy duty lamp. Once invisible beam is momentarily broken, alarm circuit latches in operation. Either power or tube failure will cause alarm circuit to operate as though light beam had been broken. Equipment is designed for operation on 105-125-volt alternating current. Made by **Photoswitch Inc.**, 21 Chestnut St., Cambridge, Mass.

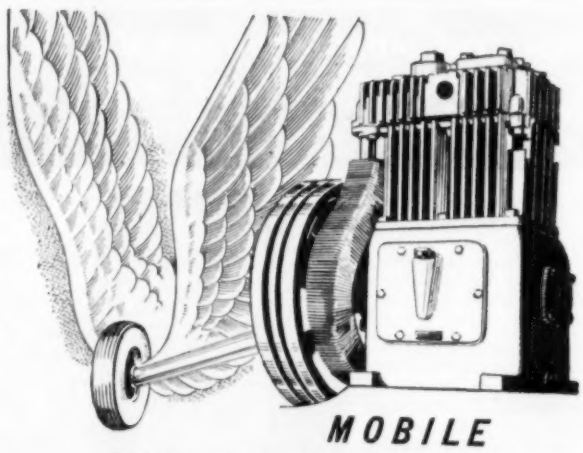
▲ Mention Item NED-3728 when writing ▲

ABRASIVE BELT GRINDER

Of improved design, this 600 line of abrasive belt grinders is made in both bench and floor models. Cast base is of heavier construction with larger sludge pan and new pulley-motor mountings which are easily adjusted. Machine can be adjusted from vertical to horizontal position while running. Belt tension and tracking device can also be operated while machine is running.

Dry type machine is arranged for individual dust collector or for connection to exhaust system. Pulleys run on ball bearings. Floor model Wet-N-Dri machine, illustrated, may be used for wet grinding, polishing and surfacing operations. It is equipped with tank and pump unit, but is also available for water main connections only. Damper controls flow from two nozzles which give uniform spray. Dry operations may be performed by shutting off water, removing drain connection and attaching air exhaust. Made by **Hammond Machinery Builders, Inc.**, 1623 Douglas Ave., Kalamazoo, Mich.

▲ Mention Item NED-3729 when writing ▲



MOBILE AIR COMPRESSOR SPECIALISTS

new MOBILE UNIT FOLDER

QUINCY COMPRESSORS roll along with the armed forces and throughout wartime industries. Some move on wheels, others on skids, tractors and watercraft. Each has been designed especially for its particular duty by QUINCY COMPRESSOR SPECIALISTS who design and build air compressors *exclusively*. Their experience is available on problems of both mobile and stationary compressed air supply.

←ILLUSTRATES NUMEROUS NEW MODELS. WRITE TODAY to Department N 5 for your FREE copy.

QUINCY COMPRESSOR CO. · QUINCY, ILLINOIS

Quincy COMPRESSORS

▲ Mention Item NED-3730 when writing ▲

"Who says a War Job is Tiring?"

FATIGUE IS THE CHIEF ABSENTEE *where Assemblies are made with*

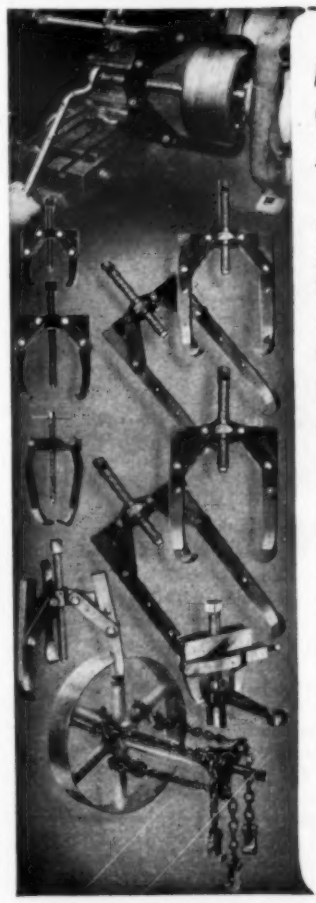
AMERICAN PHILLIPS SCREWS

War jobs are *not* tiring when assembly work is done with *automatically straight-driven* American Phillips Screws. Even inexperienced hands catch on quickly to the simple routine of aiming and driving with one hand, while the other hand braces the work. No nerve-strain . . because there's no chance of fumbling starts and wobbly, crooked driving . . hence no undue weariness that slows production. Instead, always the stimulating incentive of work well done . . because the non-slip connection between the 4-winged driver and the tapered recess of the American Phillips screw-head means that operators literally *can't miss*. Hour after hour, each American Phillips fastening duplicates all others, with a screw-head that sets up tight and plumb-level. No burred or broken heads, no gouged work-surfaces, no gashed hands.

4-winged driver can't twist out of Phillips Recessed Head

AMERICAN SCREW CO.
PROVIDENCE, RHODE ISLAND
Chicago: 589 E. Illinois Street
Detroit: 5-267 Gen. Motors Bldg.

▲ Mention Item NED-3731 when writing ▲



ARMSTRONG-BRAY GEAR & WHEEL PULLERS

Essential Tools . . . Prompt Delivery

Today wheels must keep turning . . . shut-downs for repairs and change-overs must be brief, and a good wheel puller is essential to save valuable man and machine-hours and prevent breakage of irreplaceable wheels, pulleys and gears.

ARMSTRONG-BRAY GEAR AND WHEEL PULLERS come in types and sizes for all industrial applications.

STEELGRIP Standard Rigid Arm Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special designs. 11 types.

CHAINGRIP Universal Pullers pull spoked wheels, solid gears, pinions, etc., even though they are a considerable distance from end of shaft. Proof tested chains have chain hook on one end, and special pulley hook on other. Furnished in 2 sizes.

Write for Catalog today. Be ready for emergencies—to keep wheels turning.

ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5336 Northwest Highway
Chicago, U. S. A.

▲ Mention Item NED-3732 when writing ▲

ONE PLANT *Saved* 50%

. . . ON EQUIPMENT COST ALONE . . . Through "WELD-BILT" ENGINEERING KNOWLEDGE

This saving is typical of "Weld-Bilt" results in Materials Handling Engineering

We'll be glad to survey YOUR Materials Handling needs, show you whether standard equipment can be adapted, or whether redesigned or custom-engineered equipment will move your materials faster, and at a saving in cost. USE this complete service to your profit!

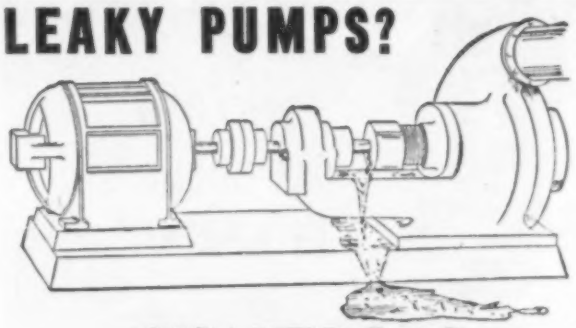
Call on "Weld-Bilt" FIRST!

• "Weld-Bilt" Hydraulic Lift Truck with HORIZONTALLY Mounted Hydraulic Unit. Built for easier mobility and longer service. Capacities to 10,000 lbs.

WEST BEND EQUIPMENT CORPORATION
Materials Handling Engineers
220 S. Water Street • West Bend, Wisconsin
Manufacturers of Portable Electric Elevators, Two-Wheel and Four-Wheel Trucks, Skid Platforms, Barrel Racks, Tiering Machines, and special equipment.

▲ Mention Item NED-3733 when writing ▲

LEAKY PUMPS?

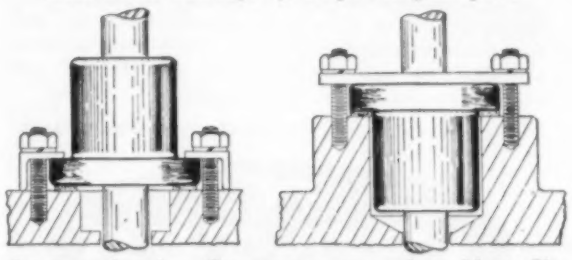


SYNTRON

"ANTI-FRICTION"

REPLACEMENT SHAFT SEALS

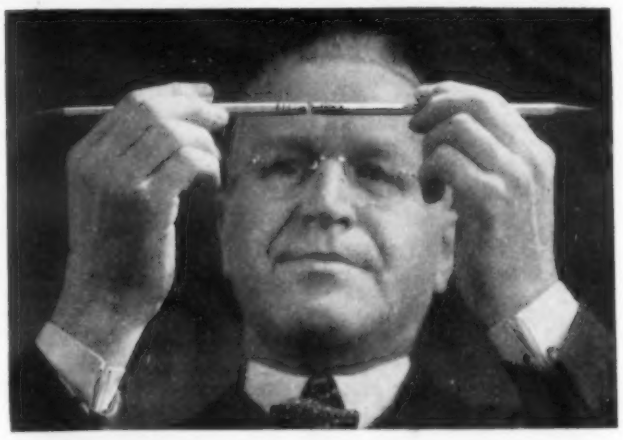
Eliminate Leakage & Repacking Expense



Easy to Apply—Comes as a complete Unit. Slip over the shaft—Clamp tight to cage. For up to 6" shafts.

SYNTRON CO., 405 Lexington Ave., Homer City, Pa.

▲ Mention Item NED-3734 when writing ▲



You Try It...

Take a couple of pencils and try to hold them in perfect alignment without touching each other for 10 seconds and see what happens! It will give you a quick demonstration of the fact that it is impossible to maintain perfect alignment between the shafts of direct-connected machines.

Ajax Flexible Couplings provide a positive but resilient connection between driving and driven shafts. They make it possible for each shaft to rotate around its own axis without creating vibration, chatter, strain on bearings, drag, power loss, reversal of torque and other detrimental factors.

Ajax interlocking drive studs held by rubber bushed, graphited-bronze bearings assure maximum flexibility, quiet operation, and complete elimination of lubrication problems.

Make the 10 second "pencil test,"—then write for Facts on Ajax Flexible Couplings.

AJAX

Incorporated 1920

AJAX FLEXIBLE COUPLING CO.
WESTFIELD, N. Y.

▲ Mention Item NED-3735 when writing ▲

● WE MAKE THE BUSHINGS YOU NEED!

Big or small . . . long or short . . . head or headless press fit . . . fixed or slip renewable—chances are your exact requirements can be met from Ex-Cell-O's regular stock of A.S.A. Standard Drill Jig Bushings. For list of Ex-Cell-O Standard Bushings send for copy of Bulletin No. 11882-A.

EX-CELL-O CORPORATION
DETROIT, MICHIGAN

EX-CELL-O Precision MACHINES AND TOOLS

▲ Mention Item NED-3736 when writing ▲

NEW Applications

PLASTIC PRINTING PLATES

Made entirely from thermosetting plastic, Mosstype printing plates are claimed to be effective substitute for metal electrotypes and stereotypes commonly used for newspaper and magazine printing. At present, these plates may be used for up to 50,000 impressions without perceptible wear.

Original metal halftone or engraving is used to make thermosetting plastic mold, which in turn is used to mold plastic printing plate. Plates are flat and hard, and are nailed to wooden blocks in same manner as metal plates. Made by **Theodore Moss Co., 35 Flatbush Ave., Brooklyn, N. Y.**

▲ Mention Item NED-3737 when writing ▲

SMALL PARTS CARRIER

Use of wire baskets and carriers conserves time in collecting, handling and distributing small parts in industrial plants. Recently introduced for this purpose, unit shown consists of wheeled carrier and removable baskets which also have carrying handles. They are similar in design to equipment used in self-service stores.

Carrier is equipped with 3-inch swivel casters in front and 4-inch wheels in back which make it easy to move. Baskets are constructed of heavy wire, welded and plated by hot dip process after fabrication. Made by **American Wire Form Co.,** 267-277 Grant Ave., Jersey City, N. J.

▲ Mention Item NED-3738 when writing ▲

LIVE CENTER

Developed especially to overcome galling or deep scratching incurred during precision thread grinding operation, this special live center stops all movement between highly finished concentric surface and center. Emery in coolant was getting between dead centers and polished 9/32-inch spherical radius hole in part. Revolving freely with part, live center eliminated trouble and emery had no effect. Made by **Sturdimatic Tool Co., 5220 Third Ave., Detroit, Mich.**

▲ Mention Item NED-3739 when writing ▲

This Precision Lathe Grinder

is equally at home with...

lathe, planer, boring mill, milling machine and other equipment . . . and does accurate, time-saving, labor-saving work with all of them.

Interchangeable ball-bearing grinding wheel spindles on corresponding sizes.

Equipped with one external or internal spindle, belt guard, grinding wheel, wheel guard, pulleys, belt and starter.

Reasonable deliveries.

for external or internal grinding

MODEL XX

THE UNITED STATES ELECTRICAL TOOL CO.
CINCINNATI, OHIO, U.S.A.

▲ Mention Item NED-3740 when writing ▲

HANNA FOOT OPERATED VALVES

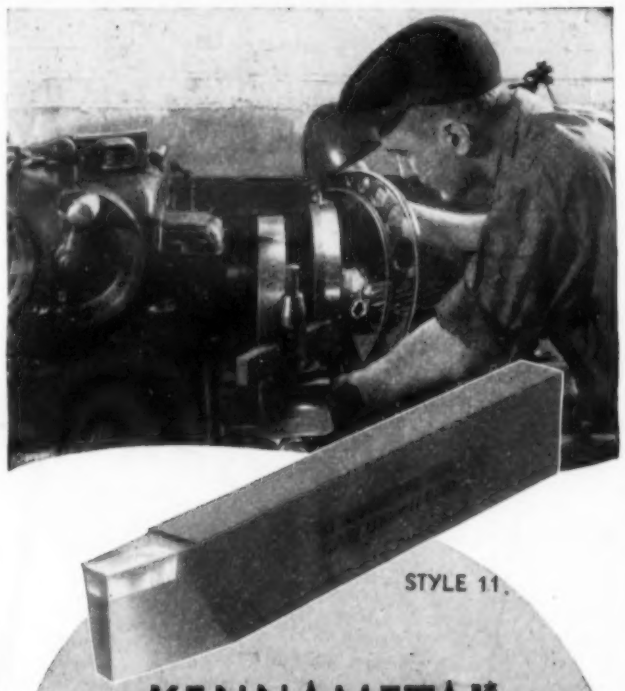
Here's fatigue-proof "TIP-TOE" action . . .

PRODUCTION jumps when operator fatigue is reduced to a minimum by the easy "Tip-Toe" action of Hanna Foot Operated Valves. The foot treadle, in down position, is only 1⅝" off the floor — in up position, only 2⅛" off the floor— *a total movement of only* ½". Hanna "Tip-Toe" Foot Valves are quick acting, rugged, long lasting.

There are, undoubtedly, many operations in your plant where the application of Hanna "Tip-Toe" Foot Valves will increase production by reducing operator fatigue. Send for details.

HANNA ENGINEERING WORKS
1765 ELSTON AVENUE • CHICAGO, ILLINOIS
RIVETERS • CYLINDERS • AIR HOISTS

▲ Mention Item NED-3741 when writing ▲



KENNAMETAL* Helps To Meet *Specifications* IN DELIVERY, TOLERANCE, AND FINISH

Because of the exacting specifications that must be met by industry in the manufacture of machined steel parts, KENNAMETAL has been installed in steel-cutting operations throughout the world. The reason for this is performance—performance in meeting requirements of delivery, tolerances, and finish.

KENNAMETAL'S hardness permits the use of greater feeds and requires less frequent regrinds. KENNAMETAL'S wear resistance often eliminates the necessity of a finish cut by machining to close tolerances on the first cut. KENNAMETAL reduces loss of size on long cuts to a minimum.

These tools produce a smooth finish because the intermetallic compound made up of fine particles of tungsten-titanium carbide permits high cutting speeds even on hard steel parts.

Simplify the fulfillment of high specifications by putting KENNAMETAL steel-cutting carbide tools in your tool posts.

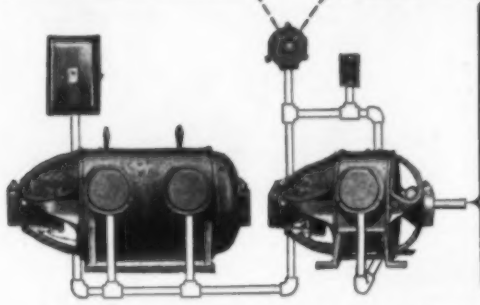
KENNAMETAL THE All American CARBIDE

*INVENTED AND MANUFACTURED IN U.S.A.

McKENNA METALS Co.
171 LLOYD AVE., LATROBE, PENNA.
Foreign Sales: U. S. STEEL EXPORT CO., 30 Church St., New York (Exclusive of Canada and Great Britain)

▲ Mention Item NED-3742 when writing ▲

10-TO-1 SPEED RANGE FROM A-C POWER



1 TO 15 HP DRIVE FOR LATHES . . . MILLS . . . . CONVEYORS PUMPS - FANS STOKERS . . and other adjustable speed applications

Here's the new, low-cost way to get adjustable speed, constant torque drive from a-c power. The Westinghouse Adjustable Speed A-C Drive provides instant speed adjustment from 175 rpm to 1,750 rpm for continuous operation—slower speeds for starting or setup. No exciters, clutches or complicated control. Push button starts or stops the drive—a single rheostat controls the speed. Nothing else to buy. Write for bulletin DD-4063. Westinghouse Electric & Manufacturing Company, East Pittsburgh, Dept. 7-N. J-21171

Westinghouse
A-C ADJUSTABLE-SPEED DRIVE

▲ Mention Item NED-3745 when writing ▲

Uniform Density in SHENANGO-PENN Centrifugal Castings

THE outward pressure created by centrifugal force produces smaller, more even grain structure than found in sand castings. Brinell hardness is usually 2 to 5 points more for the same analysis.

This greater density is one of many advantages which make Shenango-Penn castings a better product. Why not look into this process? Write for Bulletin No. 143.

SHENANGO-PENN

SHENANGO-PENN MOLD COMPANY
806 West Third Street, Dover, Ohio
Executive Offices: Pittsburgh, Pa.

▲ Mention Item NED-3746 when writing ▲

Send for this FREE CATALOG

Shows hundreds of special nails, rivets, screws and other cold-forged products and their uses. Many tables and other helpful information.

JOHN HASSALL, INC.
Established 1850
398 Oakland Street
Brooklyn, N. Y.

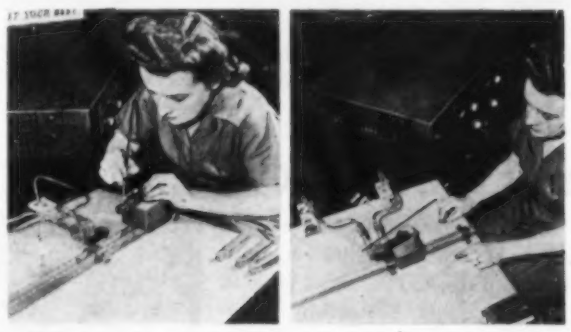
SPECIAL NAILS RIVETS SCREWS
Hassall

▲ Mention Item NED-3747 when writing ▲

NEW Processes AND Materials

CARBIDE TOOL BRAZING

Commercially available for routine brazing of carbide tools using any suitable brazing medium including copper, this line of electronic induction heating equipment affords convenience,

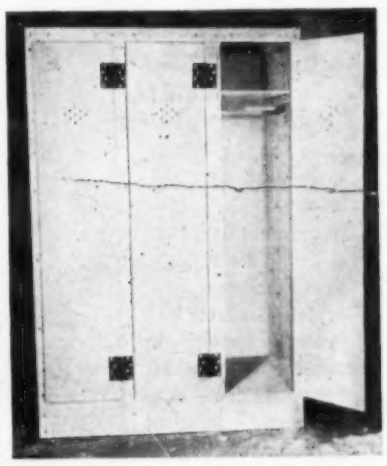


simplicity, speed, accurate control and low operating costs. Engineering service is offered in making recommendations as to size of induction equipment, basic coil designs and other factors in keeping with need of tool user. This engineering service makes possible use of induction equipment for brazing of carbide tools.

Induction tool brazing equipment is based on line of General Electric high frequency electron tube oscillators, which are available in 5 and 15 kilowatt output ratings. Auxiliary equipment includes table carrying a tool holding fixture or fixtures and water-cooled coil or coils to be connected electrically to the terminals of the oscillator. Coils may be made in any required form. Made by Carboloy Co., 11163 East Eight Mile Rd., Detroit, Mich.

▲ Mention Item NED-3748 when writing ▲

LOCKER MATERIAL



Plant carpenters or maintenance men can easily make lockers for workers with Careystone flat sheathing which is available in ⅜-inch sheets measuring 48 x 96 inches Other thicknesses are available. Claimed to provide effective substitute for metal, this material is made of Portland cement and asbestos fibers subjected to pressure. Stone-like in substance, it will not rot, rust or corrode and it is fire and rodent proof. Made by The Phillip Carey Mfg. Co., Dept CD 79, Lockland, Cincinnati, O.

▲ Mention Item NED-3749 when writing ▲

Downs
SAFETY PLATE GRIPS

Downs Safety Plate Grips will hold with a positive grip in any position. Ideal for lifting or laying material in a horizontal position or for turning plates over without the slightest danger of the grip letting go. Will not damage finished surfaces—easily operated by one man. Available for various plate thicknesses up to 6" and ½ to 10 ton capacities. Write today for specifications.

DOWNS CRANE & HOIST CO.
540 West Vernon Ave. • Los Angeles, Calif.

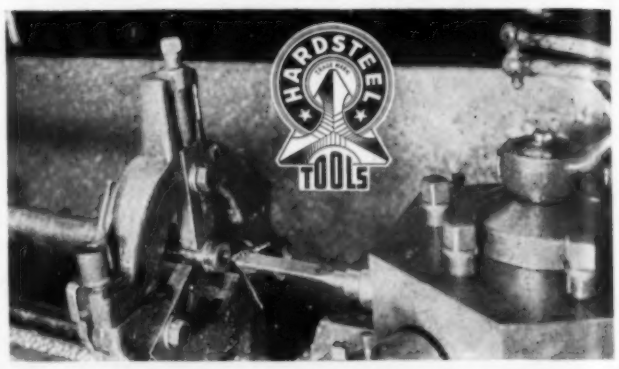
▲ Mention Item NED-3750 when writing ▲

Springs have a fifth column enemy, tiny flaws and seams not visible to the naked eye. For that reason Hunter inspection puts springs through the Magnaflux test, a method that readily reveals defects when a spring is magnetized and dusted with powdered iron. Inspection of this kind is necessary to insure the *best* for armament or for civilian use. Whichever it is, there is only ONE right spring for the job! Hunter will make it to your specifications or design it for you.

HUNTER PRESSED STEEL CO., LANSDALE, PENNSYLVANIA

HUNTER
Science in Springs

▲ Mention Item NED-3751 when writing ▲



Eliminate Expensive Grinding
Drill Hardened Steel Parts with "HARDSTEEL" Drills

You can speed production and cut costs by eliminating grinding operations—simply use "HARDSTEEL" drills to drill, ream, countersink and counterbore steel parts hardened by any process—without annealing.

One manufacturer of push rods for aircraft engines saved $7500 annually on grinding wheels alone when "HARDSTEEL" drills made unnecessary a single grinding job.

"HARDSTEEL" drills work with ease in hardened steels—even in steels of the work hardening types. And the harder the material—the easier it is to drill.

Drill after hardening—cut your rejects—insure parts matching at assembly—by using this new drill according to the complete instructions in the "HARDSTEEL" Operator's Manual—24 pages of practical information—and yours for the asking. *Write for it today.*

BLACK DRILL CO. • 5005 Euclid Ave., Cleveland, Ohio
"YOU HARDEN IT—WE'LL DRILL IT"

"HARDSTEEL"
DRILLS • REAMERS • TOOL BITS • SPECIAL TOOLS

▲ Mention Item NED-3752 when writing ▲

Attention Gage Users
IMMEDIATE DELIVERY

WESTERN UNION

TO ALL GAGE USERS
YOU ARE OFFERED IMMEDIATE DELIVERY
FROM COMPLETE STOCK ALL MODELS ALL
SIZES AGD ADJUSTABLE SNAP GAGES STOP
ORDERS SHIPPED WITHIN 24 HOURS
THE SHEFFIELD CORPORATION

HOW TO ORDER
State Frame Model and Frame Size. Stipulate whether gage is to be set and sealed. Give complete marking instructions if set and sealed.

FOR SPECIFICATIONS SEE SHEFFIELD HANDBOOK No. 42-2 PAGES 150-153

THE SHEFFIELD CORPORATION
DAYTON, OHIO, U. S. A.

▲ Mention Item NED-3753 when writing ▲

To get FASTER more ACCURATE TENSION TIGHTENING...

..use MOSSBERG TORQUE TOOLS!

BECAUSE they're made in 4 calibration ranges, dial graduations on Mossberg Torque Tools are larger, more widely spaced. Aircraft assemblymen can read 'em easier... measure nut and bolt tensions faster, *more accurately!*

EXAMINE the improved dial mounting and you'll see another reason why Mossberg Torque Tools control tensions more accurately. This rigid mounting protects dials from bumps that might knock them out of adjustment.

WIDELY USED by the U.S. Navy, by many leading aircraft makers, Mossberg Torque Tools have *proved* 98% accurate under most severe conditions. Write for complete information on sizes and prices!

APCO MOSSBERG COMPANY
161 Lamb Street, Attleboro, Mass., U. S. A.

▲ Mention Item NED-3754 when writing ▲

REALLY, it's no hardship when you have to buy smaller motors. You save money. But remember, when you can't buy 'em big—buy 'em good.

Now that you cannot depend on oversize to take your motors through tough service—you must depend on quality. Investigate Fairbanks-Morse Motors with *Copperspun* Rotors.

The winding of the *Copperspun* Rotor is centrifugally cast of COPPER in one piece. It provides electrical and thermal characteristics that give this motor the stamina to stand up under the most severe service without mechanical failure. You can operate a Fairbanks-Morse Motor with *Copperspun* Rotor at its full rated capacity continuously and indefinitely without fear of damage from overloading.

Fairbanks, Morse & Co., 600 S. Michigan Avenue, Chicago, Illinois.

Copperspun

FAIRBANKS-MORSE
DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · SCALES · WATER SYSTEMS · FARM EQUIPMENT · STOKERS · AIR CONDITIONERS · RAILROAD EQUIPMENT
Motors

▲ Mention Item NED-3755 when writing ▲

New Processes & Materials

PLASTIC COATING

Applied like paint to protect boiler drums, metal, wood or concrete storage tanks and water submerged surfaces against corrosion and fungus growths, Serviron plastic coating never dries hard. It stretches and contracts with temperature changes, eliminating danger of hairline cracks in coating which would permit undetected corrosion under protective surface. When applied to already pitted surfaces, coating stops further pitting. It will not melt, freeze, crack or peel at temperatures from below freezing to 500-550 Fahr., it is claimed.

This material withstands certain acids, brines and caustics. It may thus be used to coat valves, ammonia lines and underground pipes and tanks. For best results it is applied directly to surface in one coat, without primer coat. Made by **Saverite Engineering Co.**, 1085 Clinton St., Hoboken, N. J.

▲ Mention Item NED-3756 when writing ▲

SPRAY TYPE INSULATION

Applied in single spraying operation, lightweight cellular blanket adheres to steel, wood and masonry to provide noise reduction factors up to 90 per cent, as well as condensation control and thermal insulation. Illustration shows material being applied to underside of corrugated metal roof.

Process consists of forcibly projecting, through specially constructed air gun, dry fibrous materials simultaneously with atomized adhesive. Adhesive primes surface being treated and coats fibers as they leave air gun nozzle. Coating conforms to any surface shape or contour.

Insulation can be applied to any surfaces exposed to extremely low temperatures or temperatures ranging up to 300 degrees Fahr. It will not slip, sag or fall, regardless of vibration. Coating is self-bonding, vermin-proof, odorless and corrosion resistant. It is available in five standard types in variety of thicknesses, surface colors and textures to suit conditions. Made by **Sprayo-Flake Co.**, Dept. N, 2721 Irving Park Rd., Chicago, Ill.

▲ Mention Item NED-3757 when writing ▲

CONCRETE SURFACER

Concrete floors can be hardened, colored and rendered dustproof by application of Dye-Crete color hardener, it is claimed, without need of etching to neutralize alkaline content of concrete. Material completely fills and seals most minute pores and voids, giving concrete stone-like hardness to full depth of penetration. Hardener is available in six attractive colors and clear. Coverage should range between 250 and 400 square feet per gallon, depending on porosity of surface. Made by **The Wilbur & Williams Co.**, Park Square Bldg., Boston, Mass.

▲ Mention Item NED-3758 when writing ▲

Why give up when ceramic products of burned clay are such satisfactory substitutes for products formerly made of hard-to-get critical materials?

You will find our Engineering and Research Departments both competent and glad of the opportunity to help you solve your material scarcity problems.

NATIONAL FIREPROOFING CORPORATION
214 East Ohio St., N. S., Pittsburgh, Pa.

▲ Mention Item NED-3759 when writing ▲

BLAW-KNOX BUCKETS

take the least of your crane time—handle more pay load

Send for the catalog which describes the bucket you need—

- No. 1853—Blaw-Knox Buckets for Cement, Chemical and Fertilizer Plants.
- No. 1696—Blaw-Knox Buckets for Single Drum Hoists for use on Railroads, Mills, Foundries, Etc.
- No. 1745—Blaw-Knox Buckets for "Burtoning" handling Nitrates, Grain, Potash, Etc.
- No. 1757—Blaw-Knox 2 Line Lever Arm Buckets for Rehandling, Barge Cleanup, General Purpose, Hard Digging, Dredging.
- No. 1865—Blaw-Knox 4 Rope Buckets for Coal, Ore and Cleanup.
- No. 1752—Blaw-Knox Buckets for Incinerator Service.

Installation of a Blaw-Knox Bucket at a "trouble-spot" takes that worry off your mind—definitely—for each bucket is tailor-made for its particular job.

For digging and rehandling the many bulk materials throughout industry there's a Blaw-Knox Bucket.

You can select a bucket from the many interesting catalogs listed above.

BLAW-KNOX DIVISION of Blaw-Knox Co.
2068 FARMERS BANK BUILDING, PITTSBURGH, PA.
NEW YORK · CHICAGO · PHILADELPHIA · BIRMINGHAM · WASHINGTON

▲ Mention Item NED-3760 when writing ▲

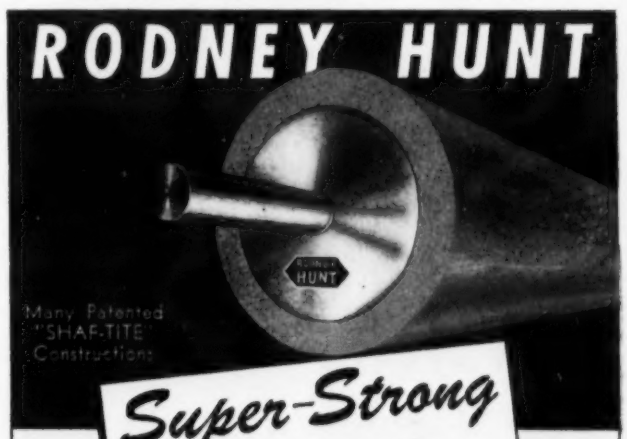
THESE TOUGH MONSTERS CAN'T MOVE WITHOUT THIS

These properties have made Formica valuable for many mechanical and electrical uses, and suggest many new peacetime applications.

THE FORMICA INSULATION COMPANY
4625 Spring Grove Ave., Cincinnati, O.

▲ Mention Item NED-3761 when writing ▲

RODNEY HUNT



Super-Strong ROLLS

WOOD, METAL, RUBBER, PLASTIC

Specializing in rolls for 50 years, Rodney Hunt today makes use of new materials and applies patented features of design and construction which make rolls super-strong. Textile, paper and many other industries have ended roll troubles and cut roll costs by standardizing on "Rodney Hunt". Write for Catalog No. 740.

RODNEY HUNT MACHINE COMPANY
73 MAPLE STREET ORANGE, MASS., U. S. A.

▲ Mention Item NED-3762 when writing ▲

Accurate Springs

WHAT TYPE DO YOU NEED . . . HOW MANY AND WHEN?

● If one of your problems is springs—dependable springs, that you must have in reliable quantities to keep your production at its peak—perhaps we can help you.

With our organization running in smoother-than-ever form we are producing more and faster and better products—to help you produce more, faster and better. We've learned short cuts and through experience have accumulated "know how" that is saving much time, trouble and headaches.

That is why we feel that your seemingly tough spring problem may find an easy answer here at Accurate. If you will show us what type—how many—and when you need springs or wireforms, we'll come up with answers you may find pleasantly surprising.

Send for the new Accurate "Handbook of Technical Data". It's handy, compact, informative. You'll be glad to have it.

ACCURATE SPRING MFG. CO.
3805 W. Lake St. • Chicago, Ill.

▲ Mention Item NED-3763 when writing ▲

Thread it with an OSTER!

NO. 562 TOM THUMB Portable PIPE AND BOLT Machine

Regularly furnished for bench use but can be obtained with wheel stand, as illustrated, where easy portability by one man is desired. Either quick-opening, fixed die-head or quick-opening, individual, quick-change die-heads and dies are furnished, as desired.

Oster No. 562 "TOM THUMB" Machine threads pipe and bolts at high speed. Regular range: 1/4" to 2" pipe; Range with drive shaft: 2-1/2" to 8" pipe; Bolt range: 5/16" to 1-1/4" N.C. or Whitworth; 5/16" to 1-1/2" N.F. or B.S.F. This machine threads nipples as short as 3 1/2" in the 2" size on both ends without nipple chuck and pipe or studs as short as 2-1/2" can be held and threaded on one end. (Other sizes in proportion.) Send for catalog and price list.

OSTER THE OSTER MFG. COMPANY
2066 East 61st Street • • • • Cleveland, Ohio

THREADING MACHINES • TURRET LATHES

▲ Mention Item NED-3764 when writing ▲

CASTERS
Have what it takes . . .

FOR over 40 years Colson has manufactured casters in hundreds of types and sizes. There's a Colson caster *for every purpose*, and throughout industry where jobs must be done in the shortest possible time, you'll find Colson casters on all kinds of equipment. • Today, we are supplying casters *first* where war needs demand them. Normal channels can be supplied only after war requirements are *fully satisfied*.

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS · INDUSTRIAL TRUCKS AND PLATFORMS · LIFT JACK SYSTEMS · BICYCLES · CHILDREN'S VEHICLES
WHEEL CHAIRS · WHEEL STRETCHERS · INHALATORS · TRAY TRUCKS · DISH TRUCKS · INSTRUMENT TABLES

▲ Mention Item NED-3765 when writing ▲

New Processes & Materials

PAINT STICK MARKER

Weatherproof and fast drying, Markal "N" paint stick marker makes wide, legible mark on all cold surfaces. This paint in stick form was developed especially for use in shipyards, steel mills, railroad shops and foundries. It produces permanent markings on metal, lumber, rubber, stone, marble, hard polished plate glass, porcelain, vitrolite, plastics, cellophane and other surfaces. It is particularly suitable for layout purposes on steel plates whether bare or coated with zinc chromate or other protective coatings used in pickling.

Marks will dry sufficiently immediately after application so that surfaces may be handled without smearing. They dry thoroughly in ten minutes after which surfaces may be walked on without effacing markings. Paint sticks are made in red, white, blue, green, yellow and black. Thus, colors may be used for identification purposes as well as for piece work marking. Made by **Markal Co.**, 20 E. Lake St., Chicago, Ill.

▲ Mention Item NED-3766 when writing ▲

CLEANSING COMPOUND

Developed for removing lacquer, dopes and paints from hands without use of explosive solvents, Den-tex cleansing compound is claimed to be neither irritating nor toxic to the skin. Cream is put on dry hands and worked into paint or lacquer. It is then rinsed off with water, leaving the pores open and clean and the skin soft. Made by **Dennis Chemical Co.**, 2703 Papin St., (3), St. Louis, Mo.

▲ Mention Item NED-3767 when writing ▲

WATERPROOF CABLE

Differing from previous design only in armor covering, Loxsteel waterproof shipboard cable is alternate for basketweave types. Full interlocking metallic tape armor forms smooth

inner and outer surfaces. Double packed seal prevents moisture from entering armor or junction boxes. Cable is flexible and can be bent without injury around circle only six times cable diameter.

Standard marine fittings can be used. Conductors are available in all sizes and required numbers. Insulation is rubber, synthetic resin or varnished cambric and cable is made with or without lead sheath. Made by Hazard Insulated Wire Works Div., **Okonite Co.**, Wilkes-Barre, Pa.

▲ Mention Item NED-3768 when writing ▲

SPARTAN

TANNAGE MAKES LEATHER PACKINGS DO MORE

Longer life . . . surer sealing . . . low friction . . . flexibility at low temperatures . . . adaptability to many mediums — are a few of the reasons why leather is an ideal packings material.

Add Graton & Knight's exclusive "combination" tannage — Spartan — and you get these advantages: chrome leather's resistance to oil and heat (around 200° F.) . . . mellowness and flexibility not found in the usual chrome-tanned leather.

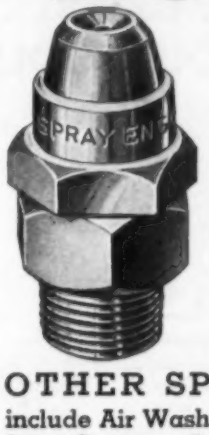
Specify Spartan — acknowledged the top-quality packings leather.

Write for Spartan Packing Catalog

GRATON & KNIGHT COMPANY
WORCESTER GRATON AND KNIGHT MASSACHUSETTS

▲ Mention Item NED-3769 when writing ▲

SPRACO NOZZLES



Nozzles to produce any standard type of spray . . . full cone, hollow cone, or flat fan-shaped . . . can be supplied in a wide range of sizes and capacities. For spraying, cooling or processing acid or caustic solutions, we can furnish nozzles made from machinable, non-corrosive alloys.

OTHER SPRACO PRODUCTS include Air Washers, Cooling Systems, Humidifying Systems, Automatic Spray Finishing Machines, Spray Painting Equipment, Battery Spray Moistening Equipment, Fire-Fog Equipment, and Powder Blowers.

Write for Bulletin G-100

SPRAY ENGINEERING CO.
106 Central St. Somerville, Mass.

▲ Mention Item NED-3770 when writing ▲

Double Protection against DERMATITIS

Neoprene Stanzoils keep hands safe from outside harm—and from allergy to rubber gloves

Stanzoils of DuPont neoprene withstand attack of oils, acids, caustics so well they often last 3 to 7 times as long as rubber gloves — which gives you the best possible hand protection as well as expense saving. But also, neoprene Stanzoils do not cause dermatitis of the hands as rubber gloves do in some cases. It pays you to give your war-busy hands the double safety of Stanzoils — black, white, all standard styles and sizes. Write today for full data.

STANZOIL PIONEER

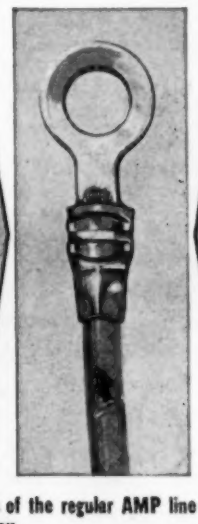
Synthetic Rubber Division
THE PIONEER RUBBER COMPANY
248 Tiffin Road, Willard, Ohio, U.S.A.
New York • Los Angeles

MADE WITH DU PONT NEOPRENE

▲ Mention Item NED-3771 when writing ▲

NOW! — AMP SOLDERLESS TERMINALS WITH "Diamond Grip" INSULATION SUPPORT

★ MODERN, SCIENTIFIC ENGINEERING ★ RUGGED DESIGN ★ EASY, UNIFORM INSTALLATION ★ FOR WIRE SIZES No. 16 TO No. 22 INCLUSIVE



An electrical and mechanical connection superior to any now available—featuring an insulation support sleeve which firmly grips the insulation, protecting against vibration — abrasion — corrosion — abuse — breakage

All the distinctive features of the regular AMP line plus the advantages of the unique "DIAMOND GRIP"

Light—compact • Meets A.N. and government specifications • Eliminates tape and insulation tubing • Built-in wire guide for easy installation • Double crescent crimp installed for assured contact; "Diamond Grip" for positive insulation support.

AIRCRAFT-MARINE PRODUCTS INC. AMP SOLDERLESS WIRING DEVICES

Write for Bulletin No. 13 for complete info.
AIRCRAFT-MARINE PRODUCTS, INC
Dept. K, 286 North Broad Street, Elizabeth, New Jersey
"Engineering Applied to the End of a Wire"

▲ Mention Item NED-3772 when writing ▲

Alnor VELOMETER

★ all purpose air velocity meter

Instantaneous, direct readings of air speed measured in feet per minute with the *Alnor* Velometer give you the quick, accurate information on air movement needed to check operation of blowers, fans, air conditioning installations, and similar equipment. No calculations, no timing, no conversion tables; read velocities direct from the Velometer scale. Extension jets permit accurate readings in many locations that would be completely inaccessible with other means of measurement.

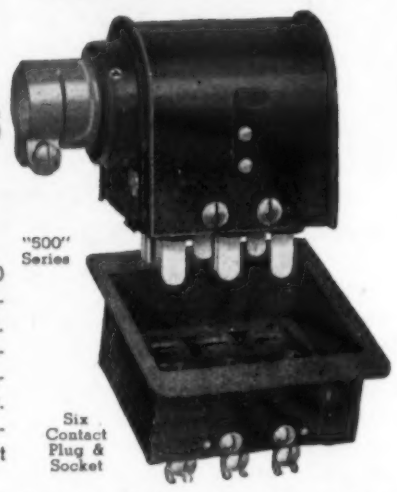
The Velometer is made in several standard ranges from 20 fpm to 6,000 fpm, and up to 3 inches static or total pressure. Special ranges available as low as 10 fpm and up to 25,000 fpm velocity and 20 inches pressure.

Write for Bulletin No. 2448-E.

Illinois Testing Laboratories Inc.
430 NORTH LA SALLE STREET • CHICAGO, ILLINOIS

▲ Mention Item NED-3773 when writing ▲

JONES HEAVY DUTY PLUGS AND SOCKETS



Designed for 5000 volts and 25 amperes per contact. Fulfills every electrical and mechanical requirement. Polarized to prevent incorrect connections.

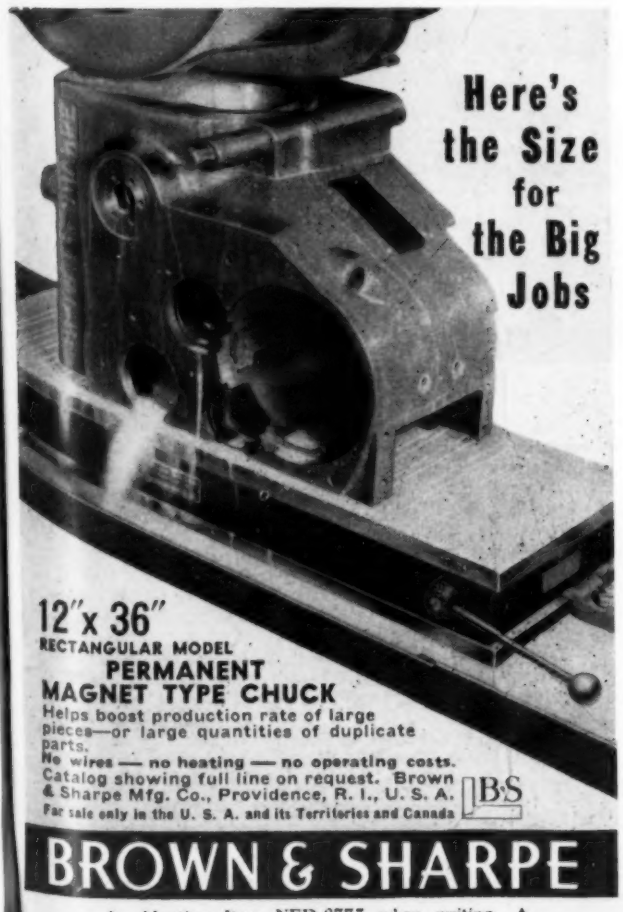
Plug and socket bodies of molded bakelite. Plug contacts of hard brass, silver plated. Socket contacts of phosphor bronze, silver plated.

Terminals numbered to facilitate correct and rapid wiring. Plug and socket bodies are interchangeable in caps and brackets. Furnished in 2, 4, 6, 8, 10, and 12 contact.

Write today for Bulletin No. 500

HOWARD B. JONES
2304 WABANSIA AVE., CHICAGO

▲ Mention Item NED-3774 when writing ▲



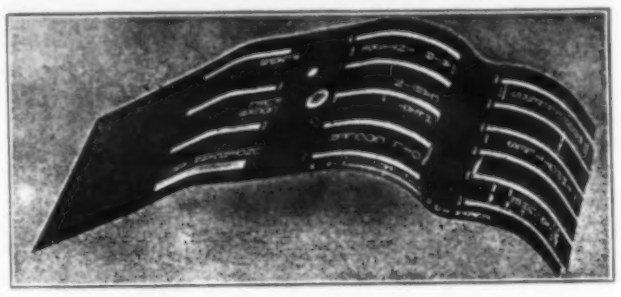
BROWN & SHARPE

▲ Mention Item NED-3775 when writing ▲

New Processes & Materials

CURVED PLASTIC PANELS

Fabrication of plastic parts and panels in cylindrical shapes or simple and compound curves through improved molding process is possible without special tools, dies or steel molds.



Illustrated airplane panel, accurately machined to accommodate levers and knobs, is first molded flat and then curved while suspended in semi-cured state on inexpensive forming device. It conforms rigidly to specified curves.

Considerably lighter than aluminum or other metals previously used, plastic panels can be made to practically any specification. Made by **Theodore Moss Co.**, 35 Flatbush Ave., Brooklyn, N. Y.

▲ Mention Item NED-3776 when writing ▲

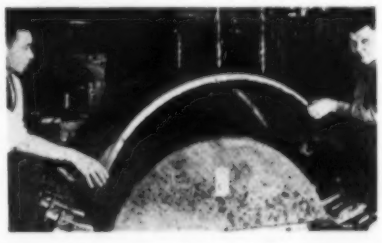
WATERPROOF LABEL PAPER

Capable of adhering to many different surfaces, Alcoseal label paper has added advantage of being water resistant. Coated for application by heat or by moistening with denatured alcohol, depending upon nature of surfaces to which labels are applied, paper is provided with light or heavy coatings.

Paper is best applied with alcohol on such materials as Bakelite, brass, stainless steel, tin and varnished surfaces. Heat is used for application to aluminum, glass, fiber cartons, wood and similar materials. Water or moisture will not cause labels to loosen. Test samples of these papers are available from **McLaurin-Jones Co.**, Brookfield, Mass.

▲ Mention Item NED-3777 when writing ▲

PLASTIC DIE MAKING



Measuring 4 feet across and 2 feet thick, this stretch-press cowling die was made of Durez cast resin in less than 24 hours. Claimed savings over previous materials were two days and 50 per cent in cost. Die was made in production laboratory of Fairchild Aviation division.

Original pattern was used to make plaster cast mold. This cast could be used again if required. Minor changes in original design can be readily incorporated in plaster mold. Because of size of phenolic resin die, a core of inexpensive material was centered in mold prior to pouring resin. Shell 2 inches thick was formed over core with 200 pounds of resin. Curing required 3½ hours at 130 degrees Fahr. Resin could be cured at room temperatures in longer period of time. Resin made by **Durez Plastics & Chemicals, Inc.**, 1910 Walck Rd., North Tonawanda, N. Y.

▲ Mention Item NED-3778 when writing ▲

NEW "CONTROLLED MATERIALS" PLAN

Enables **KIRK & BLUM** *to gear their production schedule with yours!*

SHEET METAL FABRICATION NOW TIMED TO GOVERNMENT AGENCY SCHEDULES

We are the logical organization to fabricate your sheet metal products, insuring a regular and uninterrupted flow of fabricated sheet metal parts and products, conforming to the new "Controlled Materials" plan for authorized production schedules.

Our diversified stock of carbon steel and other critical materials, combined with our modern production facilities, make part deliveries remarkably fast.

Send us your blue prints for prompt quotations

Write for Booklet
"Data on Kirk & Blum Production Facilities"

THE KIRK & BLUM MANUFACTURING CO.
2813 SPRING GROVE AVE. CINCINNATI, OHIO

▲ Mention Item NED-3779 when writing ▲

Type A

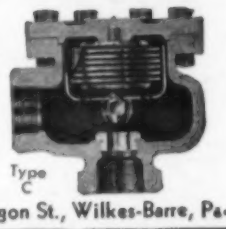
★ No Water-Logged Units
★ No Adjustment Needed
★ No Air-Binding
★ No Freeze-Ups
★ No Dribbling

Type AU

5 BIG ADVANTAGES OFFERED USERS OF NICHOLSON Thermostatic Industrial TRAPS

Type B

All types drain completely and automatically . . . same adjustment used for any pressure, vacuum to maximum allowable . . . discharge air as efficiently as water . . . complete drainage when cold prevents freezing . . . closes immediately when steam contacts bellows. Five types, sizes ¼" to 2", pressures up to 300 lbs. Bulletin No. 242.


Type C

W. H. NICHOLSON & CO., 162 Oregon St., Wilkes-Barre, Pa.

NICHOLSON Traps
THERMOSTATIC ▼ PISTON AND WEIGHT-OPERATED STEAM GASOLINE AND COMPRESSED AIR TRAPS
CONTROL VALVES ▼ FLOATS ▼ MANDRELS ▼ STEAM AND AIR SEPARATORS

▲ Mention Item NED-3780 when writing ▲

for Platforms Walkways Bridges Stairs Catwalks Boiler and Engine Rooms

KLEMP WELDED
Steel bars pressure welded at right angle on top heavy flat bearing bars. For heaviest duty.

KLEMP DIAMOND
Securely riveted for lasting perfect level bearing at all points. Truss principle.

Insure footing and traffic ways with rugged Klemp construction for all the years of your plant. Practically maintenance free. Ask for Klemp complete Catalog of open steel flooring. Write

WM. F. KLEMP COMPANY
"Steel Flooring Specialists"
6607 S. Melvina Ave. Chicago, Illinois

▲ Mention Item NED-3781 when writing ▲

▲ Mention Item NED-3782 when writing ▲

KEMPSMITH ATTACHMENTS
Broaden the Scope of Your Miller!

Here's a standard Kempsmith Type "G" Miller equipped with Vertical Head and Rotary Table for milling Dividing Head Frames. Note the deep, smooth cuts taken on the incomplete circle. Just another example of Kempsmith ruggedness and adaptability.

KEMPSMITH MACHINE CO., Milwaukee, Wis., U. S. A.

KEMPSMITH

PRECISION MILLING MACHINES SINCE 1888

▲ Mention Item NED-3783 when writing ▲

AROUND THE WORLD
...THEN BACK TO YOU

When peace comes . . . — Aeroquip, war-tested in aircraft operations from the Arctic to the Sahara to the Solomons, will return from war work and open new horizons for industrial and chemical uses of liquid-carrying lines. Plan ahead — write now.

AEROQUIP

HOSE LINES DETACHABLE FITTINGS

AEROQUIP CORPORATION, JACKSON, MICH., U. S. A.

▲ Mention Item NED-3784 when writing ▲

Fast, Smooth Operations . . . Stepped-up Production . . . Maximum Operator Efficiency and Safety are necessary requirements with which every manufacturer is faced today. LIMA Gearshift Drives meet all of these requirements, plus a background of Engineering Service thoroughly schooled and skilled in Machine Tool and Production Equipment motivation.

Built by the world's largest manufacturer of Gearshift Drives for unit motorization of machines and tools, LIMA gives the greatest range of sizes of any machine tool drive on the market. Why not get the most out of your production machines? Wire or write for address of Lima Engineering Service nearest you.

Large enough to successfully serve you, yet small enough to give personal attention to your needs.

THE LIMA ELECTRIC MOTOR CO.
361 FINDLAY ROAD
LIMA, OHIO
REPRESENTATION IN MOST PRINCIPAL CITIES
LIMA GEARSHIFT DRIVES - LIMA ELECTRIC MOTORS
LIMA MAGNETIC POLISHING LATHES - LIMA PEDESTAL GRINDERS

▲ Mention Item NED-3785 when writing ▲

New Processes & Materials

CHEMURGIC RUBBER

Developed from vegetable oils, Witcogum chemurgic rubber is comparable to rubber in many of its properties, yet requires neither critical materials nor critical equipment for its manufacture. Standard rubber mills and mixers may be used. Calendering, extrusion and vulcanizing properties are similar to that of crude and reclaimed rubber. Material is now being used for hose, tubing, wire insulation, gaskets, shims, brake linings, hospital sheeting, jar rings, extruded channels and similar products.

This synthetic rubber contains accelerator of guanadine type and sufficient sulphur to give cure in 30 minutes at 40 pounds steam pressure. All necessary vulcanizing ingredients are already present in material, though it may be loaded and softened as requirements demand. It may be used independently or as extender blended with natural rubber, reclaim or synthetic rubber. Furthermore, small amount of reclaim added to compound improves molding and facilitates its removal from molds. Softeners may be added to increase tack, improve processing and molding and give more homogeneous product.

Compounding with such pigments as carbon black or clay will result in higher tensile strength. Tensile as high as 450 pounds per square inch, elongation as high as 150 per cent, shore hardness of 60-65 and tear of 45-50 pounds per inch can be obtained through proper compounding. Water, alcohol and lubricating oils have no apparent effect. Working samples may be obtained without obligation. Made by **Wishnick-Tumpeer, Inc.**, 40 E. Forty-first St., New York City.

▲ Mention Item NED-3786 when writing ▲

WATERPROOF SEALING TAPE

Made without rubber, Mystic waterproof, pressure sensitive cloth sealing tape has wide application. Because it is non-toxic it can be used for sealing packages of medicines, foods, surgical dressings and similar products. It is also adaptable for sealing wrappings on ordnance equipment for export shipment. It will withstand salt spray, dust and gas contamination.

Tape may be stripped off and relocated without loss of powerful adhesive qualities. Of high tensile strength, cloth is so woven that it tears easily at right angles to edge. Tape is packed in rolls of any width up to 36 inches and lengths of 60 yards. Made by **Chicago Show Printing Co.**, Mystic Tape Div., 2631 N. Kildare Ave., Chicago, Ill.

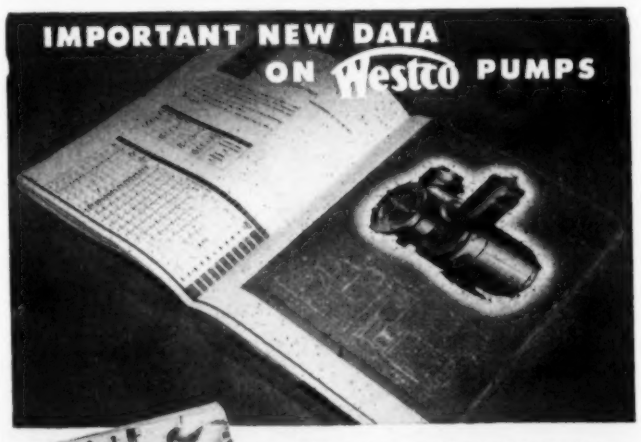
▲ Mention Item NED-3787 when writing ▲

SYNTHETIC SPONGE RUBBER

Capable of remaining soft and compressible at minus 40 degrees Fahr., synthetic rubber sponge is of medium density. Satisfactory for many wartime as well as peacetime uses, it is made in black color and can be furnished in slabs or molded shapes. Made by **The B. F. Goodrich Co.**, Dept. E, 500 S. Main St., Akron, O.

▲ Mention Item NED-3788 when writing ▲

IMPORTANT NEW DATA ON Westco PUMPS



SIXTY pages packed with vital new information on Westco Turbine Type Pumps . . .

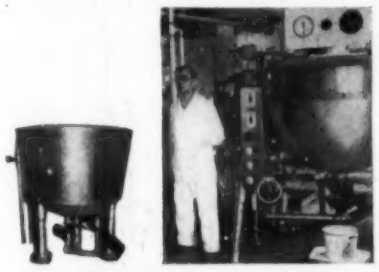
- How the single Westco turbine gives *multi*-stage performance!
- How Westcos can be quickly renewed by simply renewing liners!
- Performance charts, tables, illustrations, installation layouts on Westcos for a wide range of applications!
- Pages of timesaving pump engineering data — conversion tables, head and pressure equivalents, friction-loss tables, etc.

JUST OFF THE PRESS, this new Westco Catalog contains up-to-the-second data that should be in the files of EVERY pump user. Free copies are available as long as the limited supply lasts. Send for *your* copy TODAY!

JOSHUA HENDY IRON WORKS
POMONA PUMP CO. DIVISION
2621 LOCUST AVENUE, ST. LOUIS, MISSOURI

▲ Mention Item NED-3789 when writing ▲

▲ Mention Item NED-3790 when writing ▲

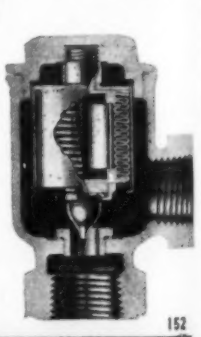


CHEMICAL AND FOOD PLANTS

all Sarco

Chrome-nickel equipment everywhere, and dozens of cookers, mixers and agitators, all equipped with Sarco No. 9 Thermostatic Steam Traps make this New York plant an outstanding example of streamlined efficiency.

The Sarco No. 9 is noted for its ability to extract all the usable heat before its wide ports open to release the condensate. It is small, low cost, works at all pressures, and is ideal for use on each coil of batteries of steam equipment in the food, process and chemical industries. Ask for Catalog No. 250.



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SARCO SAVES STEAM
SARCO COMPANY, INC.
475 Fifth Avenue, New York, N. Y.
Sarco Canada Ltd., Federal Bldg., Toronto, Ont.

▲ Mention Item NED-3791 when writing ▲

PUT ELECTRIC HEAT RIGHT WHERE YOU WANT IT WITH

G-E STRIP HEATERS

These versatile electric heaters will help you solve hundreds of difficult heating problems. Use them to construct drying cabinets; build them into process machinery; clamp them on pipes, valves, tanks, and warming tables; or mount them together with a fan for use as an air heater.

G-E strip heaters are strong and durable, easy to install, simple to use, and cost surprisingly little.* They can be used individually or they can be arranged in parallel by means of convenient bus bars which are furnished on order.

Two types are available—with steel sheath for operation at sheath temperatures up to 650 F; and with a porcelain-enameled sheath for temperatures up to 1200 F on sheath. For full details on strip heaters and other G-E midget heaters write for catalog GED-650B. *General Electric, Schenectady, N. Y.*

*For example—Catalog 51x340, 23½" long, 500-watt, 115 volts (for sheath temperatures up to 750 F)—$2.45 each. Priority of AA3 or better.

GENERAL ELECTRIC
675-66-8709

▲ Mention Item NED-3792 when writing ▲

TIME IS SO VITAL! Save up to 90%, compared with the hand sanding of metal parts, by adopting these resilient, ready-to-use Metalite Cloth shapes for your high speed tools.

THEY'LL PYRAMID OUTPUT TOO. And at the same time give a far better, more uniform finish on those difficult, irritating jobs that slow up production.

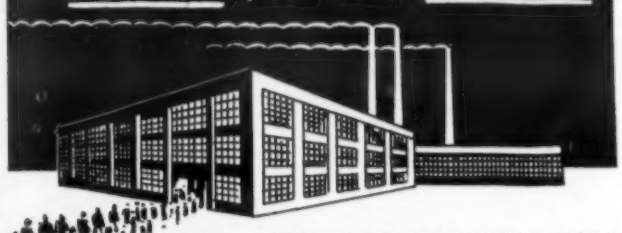
GET A DEMONSTRATION right on your own work.

Just drop us a line.

BEHR-MANNING
(DIVISION OF NORTON COMPANY)
TROY, N. Y.

▲ Mention Item NED-3793 when writing ▲

All-Out Production Demands All-Out Protection



GUARD VITAL WAR INDUSTRY WITH

PHOTOSWITCH
Electric Eye **ALARM SYSTEM**

- Creates a practically invisible fence of light of any desired length—indoors or outdoors — night and day.
- Instantly sounds alarms, operates central station system, turns on flood lights, closes gates, etc.— whenever the invisible light beam is broken.
- Available in long ranges for completely surrounding offices, factories, power plants, construction yards, etc.— short ranges to cover windows, doors, gates, platforms, vault rooms, etc.
- Quickly and easily installed. Absolutely tamper-proof.

➡ *Write for Bulletin 4009 on Intrusion & Sabotage Alarm Systems*

PHOTOSWITCH INCORPORATED
Photoelectric and Electronic Controls for Every Industrial Purpose
CAMBRIDGE, MASS. · *District Offices* IN ALL PRINCIPAL CITIES

▲ Mention Item NED-3794 when writing ▲

LOOK to TINNERMAN for newer and faster fastenings

Many New Types Just Released

• Turn your beam on the steady stream of new SPEED NUT shapes and sizes. High-precision production is turning them out at machine gun speed. Demand is spreading to more and more applications. Why? Because Speed Nuts drastically reduce weight and cost. Because they lock on screws with a firm spring tension grip that prevents vibration loosening. And because they can be applied with a speed that breaks all previous records.

Many self-retaining Speed Nuts are snapped into position for blind location assembly requiring no riveting or staking. They need not even be touched or seen while making the attachment. Approved, too, by the U. S. Army Air Forces and the Navy Dept. Bureau of Aeronautics for most non-structural attachments.

Write for our new 20-page book No. 185 for complete description of our latest developments.

TINNERMAN PRODUCTS INCORPORATED
2044 FULTON ROAD, CLEVELAND, OHIO
IN CANADA: Wallace Barnes Co., Ltd., Hamilton, Ontario
IN ENGLAND: Simmonds Aerocessories, Ltd., London

Speed Nut Systems — THE FASTEST THING IN FASTENINGS!

▲ Mention Item NED-3795 when writing ▲

NEW *Literature* AND *Catalogs*

RESURFACING WORN PARTS—12-page illustrated bulletin, "Hard-Facing with Coast Metals Makes Your Equipment Last Longer", outlines method of resurfacing worn tools and equipment by welding hard alloy coating to steel or iron surface or edge—issued by Coast Metals, Inc., 1232 Camden Ave., S. W., Canton, O.

▲ Mention Item NED-3796 when writing ▲

ALLOY METALS—16-page bulletin, "Alloy Metals Finding List and List of Sources", is first in series of bulletins on alloy metals—enables buyer to locate alloy metal suitable for specific purpose—issued by Hobart Brothers Co., Box EW-87, Troy, O.

▲ Mention Item NED-3797 when writing ▲

TOOL SHANKS—12-page illustrated bulletin No. 53T-2 is descriptive of line of Victory tool shanks—Meehanite metal is used for tool shank castings—issued by The Cooper-Bessemer Corp., 3500 Sandusky St., Mount Vernon, O.

▲ Mention Item NED-3798 when writing ▲

FIBERBOARD LOCKERS—4-page illustrated bulletin No. 920 describes pressed hard fiberboard lockers replacing former steel models—lockers are made in single and double tier types—issued by The Sanymetal Products Co., 1719 Urbana Rd., Cleveland, O.

▲ Mention Item NED-3799 when writing ▲

PUMPS & HYDRAULIC EQUIPMENT—16-page illustrated catalog No. 100 shows representative pumps and hydraulic equipment for power plants, oil fields, process industries and marine use—issued by The Aldrich Pump Co., Allentown, Pa.

▲ Mention Item NED-3800 when writing ▲

THERMOSWITCHES—8-page illustrated bulletin discusses, sensitivity, differential, lag and over-shoot, heat balance, heat gradients and thermal conductivity of thermoswitches—issued by Fenwal Inc., 70 Main St., Ashland, Mass.

▲ Mention Item NED-3801 when writing ▲

INDUSTRIAL VITAMINS — 15-page illustrated booklet, "Vitamin Protection Means Production and Profit", presents information on vitamins and effect of their regular distribution to employees by industrial concerns—issued by Vitamins Industrial, 226 North Bank Dr., Chicago, Ill.

▲ Mention Item NED-3802 when writing ▲

DRYING EQUIPMENT—27-page illustrated catalog No. 461 is concerned with fundamental drying principles, drying processes and apparatus to be used—issued by B. F. Sturtevant Co., 45 Readville St., Hyde Park, Boston, Mass.

▲ Mention Item NED-3803 when writing ▲

MACHINE TOOLS—112-page illustrated handbook contains detailed instructions for operation of six spindle Conomatics for tapping, threading, cutting and turning operations on bar stock—issued by Cone Automatic Machine Co., Windsor, Vt.

▲ Mention Item NED-3804 when writing ▲

Sound an Alarm! with this new, positive FLOW RATE INDICATOR

Actual photograph showing sturdiness and compactness of the Rota-Sight Alarm.

Do you have valuable or critical equipment that can be ruined by failure of a cooling or lubricating flow? Can an excessive flow rate at some point in your process spoil your finished product? If so, the Rota-Sight Flow Rate Alarm may give just the flow rate protection you are seeking.

This indicator operates through a float which moves up and down a pyrex tube into which triangular flutes have been fashioned. As the float rises, the area within the flutes increases, causing the float to assume a position in the tube in direct proportion to the flow rate. A magnetic extension on the float trips an external switch to operate the alarm circuit. The alarm flow point is adjustable over the entire flow range and operates accurately at the set position.

The Rota-Sight Alarm is used for flows of water, lubricating oils, filter feeds, overflows, chemical additives, etc. It is built in sizes up to 2½" and may be obtained in any corrosion-resistant metal that can be cast. It is easily installed in either horizontal or vertical lines.

Write for Catalog 92-A.

FISCHER & PORTER CO.
287 COUNTY LINE ROAD, HATBORO, PA.

▲ Mention Item NED-3805 when writing ▲

CUT TIME and EFFORT! MOVE "IT" WITH YALE ELECTRIC INDUSTRIAL TRUCKS

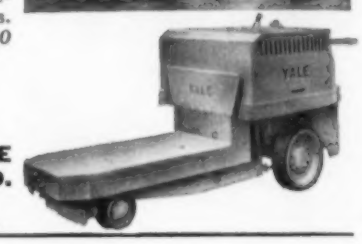
Modern efficiency demands no time be lost in any handling operations—and Yale Electric Industrial Trucks give industry the perfect answer to every materials handling job.

They move, stack, store all kinds of loads with dispatch and efficiency—and make possible savings which amount to many times the costs of the original investment.

In addition, Yale Trucks have small over-all dimensions for operation in narrow aisles, around sharp corners—even when carrying full capacity loads.

Send for information—one of the Yale Models will surely meet your requirements.

Capacities up to 60,000 lbs.



-YALE-
THE YALE & TOWNE MANUFACTURING CO.
Philadelphia Division
Philadelphia, Pa., U. S. A.

▲ Mention Item NED-3806 when writing ▲

1 LORAIN OFFERS 14 MATERIAL HANDLING SERVICES

• This Lorain crane is equipped with a magnet to move scrap with the greatest efficiency. Listed below are 13 more attachments and accessories that may be used on this unit to solve practically any material handling problem, economically and profitably.

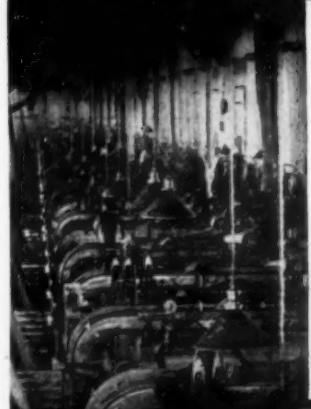
Lorain cranes are offered in 5 to 40-ton capacities. Write for descriptive catalogs.

THE THEW SHOVEL COMPANY
Lorain, Ohio

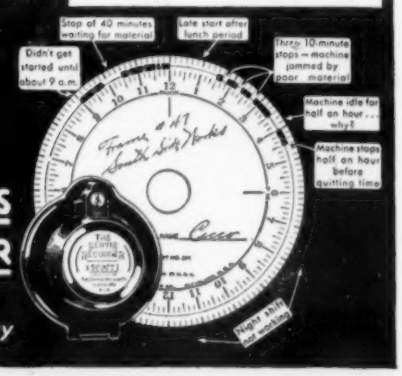
THEW-LORAIN

▲ Mention Item NED-3807 when writing ▲

MACHINE HOURS *—how to increase same!*

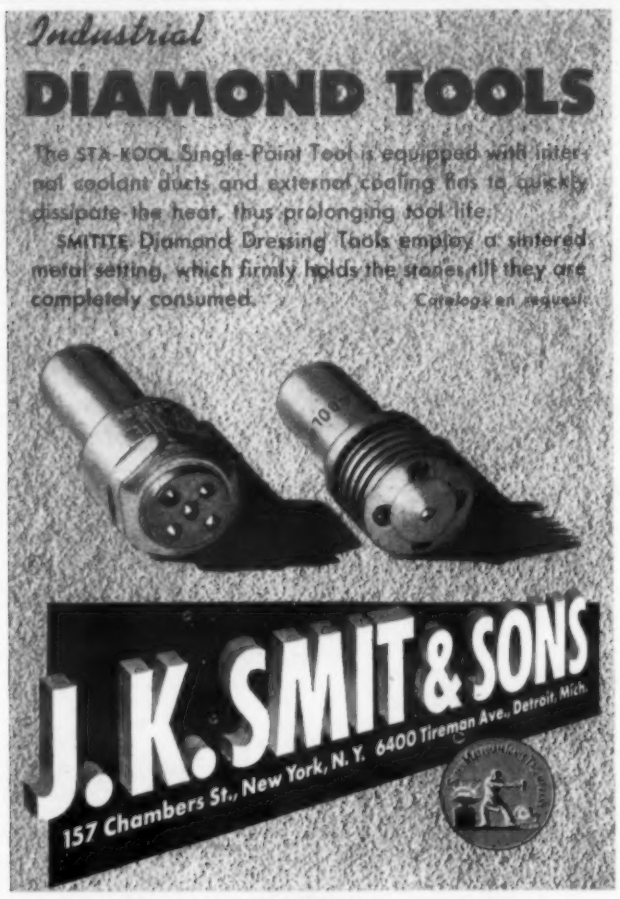


Do the obvious thing. Put on *Servis Recorders.* • This little *Servis Recorder* "rides" right on the machine, 24 hours a day. It records on a chart *when* the machine is busy, *when* it is standing idle, and *how long.* Then the chart is laid on your desk. Then you can *really see* your own factory, *see* what's going on! • This very thing is being done today in war plants all over the country. Simple? All worth-while things are simple. The *Servis Recorder* bolts or clamps right on the machine itself—no ink, no pencils, no electric wires. Send for folder—"*A Busy Plant.*" The Service Recorder Co., 1375 Euclid Ave., Cleveland, Ohio.

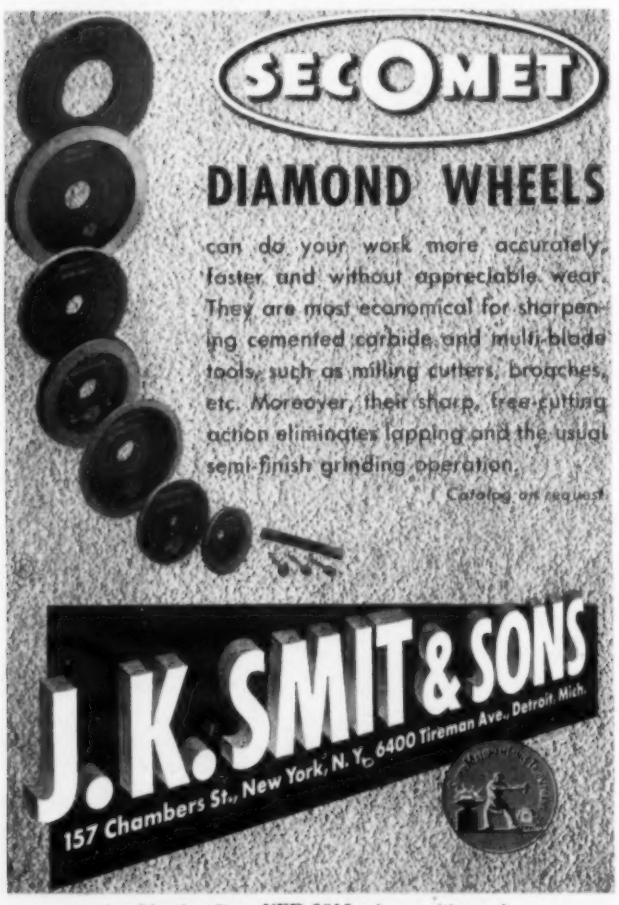


The SERVIS RECORDER
The "Time Clock" for Machinery

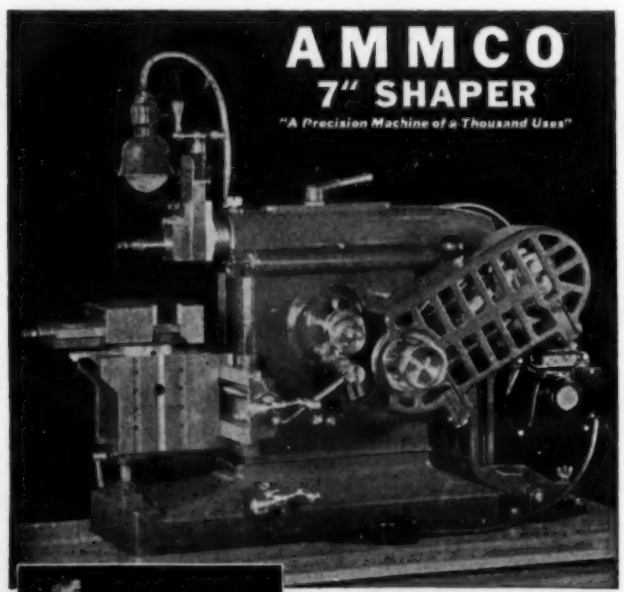
▲ Mention Item NED-3808 when writing ▲



▲ Mention Item NED-3809 when writing ▲



▲ Mention Item NED-3810 when writing ▲



IT'S PORTABLE

-- Saves Steps and Time --

Don't tie up a big shaper when so many jobs can be done just as accurately and much quicker and more economically on the AMMCO 7" PRECISION SHAPER.

Available for stationary installation or mounted on portable cabinet easily rolled to the mechanic's workbench . . . Write today for specifications and prices.

AUTOMOTIVE MAINTENANCE MACHINERY CO.
2110 Commonwealth Avenue North Chicago, Ill.

▲ Mention Item NED-3811 when writing ▲

New Literature—Continued

RADIAL & PIVOT BEARINGS—4-page illustrated bulletin No. 43 covers line of radial and pivot type bearings from ⅛ to 5/16 inches outside diameter in both steel and non-magnetic beryllium—issued by Miniature Precision Bearings, Keene, N. H.

▲ Mention Item NED-3812 when writing ▲

CONVEYORS—6-page illustrated catalog describes scientifically planned conveyors for more efficient indoor transportation of such products as cartridges, shell filled with chemicals and hot drop forgings for tanks—issued by The Alvey-Ferguson Co., 31 Disney St., Cincinnati, O.

▲ Mention Item NED-3813 when writing ▲

TRAINING WAR WORKERS—illustrated booklet, "These Are Your Weapons," presents fourteen ways to increase war production—simple tests outlined may be applied by every worker to his own regular job—issued by Plomb Tool Co., Dept. D, 2209 Santa Fe Ave., Los Angeles, Calif.

▲ Mention Item NED-3814 when writing ▲

PORTABLE ELECTRIC TOOLS—70-page illustrated catalog No. 900-2nd ed. covers Hicycle portable electric tools for industry—describes 166 models in 557 sizes—issued by Chicago Pneumatic Tool Co., Dept. A, 6 East Forty-fourth St., New York City.

▲ Mention Item NED-3815 when writing ▲

PLASTICS—8-page illustrated booklet, "Engineering Highlights About DuPont Plastics," is presented to furnish as complete data as possible to help in evaluation of plastics for essential needs today—issued by E. I. duPont de Nemours & Co., Wilmington, Del.

▲ Mention Item NED-3816 when writing ▲

SAFETY EQUIPMENT—illustrated catalog covers line of industrial safety equipment providing protection for head, eyes, nose, throat, lungs and other parts of body—issued by Chicago Eye Shield Co., 2300-C Warren Blvd., Chicago, Ill.

▲ Mention Item NED-3817 when writing ▲

PIPING—6-page illustrated "Piping Pointers" bulletin No. 6 is one of series designed to train new maintenance men to keep piping systems working—contains helps in meeting material shortages and examples of wartime piping ingenuity—issued by Crane Co., 836 S. Michigan Ave., Chicago, Ill.

▲ Mention Item NED-3818 when writing ▲

CASTINGS—32-page illustrated bulletin No. 1 covers line of gray iron and Meehanite castings— among those illustrated are electrical resistance grids, duplicator cylinders and crankshafts—issued by The Hamilton Foundry & Machine Co., 1551 Lincoln Ave., Hamilton, O.

▲ Mention Item NED-3819 when writing ▲

AIRCRAFT CLIPS & CLAMPS—10-page illustrated catalog No. 263 contains information on clips and clamps for aviation industry designed in accordance with applicable aeronautical standards—issued by Automotive Rubber Co., Dept. ED, 8601 Epworth Blvd., Detroit, Mich.

▲ Mention Item NED-3820 when writing ▲

FASTENING DEVICES—illustrated catalog contains specifications of toggle bolts, fastening and hanging devices available through national network of wholesale outlets—issued by Paine Co., 2977 Carroll Ave., (Station D) Chicago, Ill.

▲ Mention Item NED-3821 when writing ▲

▲ Mention Item NED-3822 when writing ▲

▲ Mention Item NED-3823 when writing ▲

★ The Axis gang will get little comfort out of the latest developments on the Cleco front. For, to a hustling line of slow and fast-hitting riveters, plus an impressive assortment of squeezers, plus the famous Cleco sheetholders, now have been added Riv-N-Jectors, ingenious magazine-equipped gadgets that save 90% of the rivets usually dropped in the riveting process.

For fast, efficient riveting with minimum waste, write today for free Bulletin 85 on Riveters, Bulletin 87 on Sheetholders and Bulletin 89 on Riv-N-Jectors.

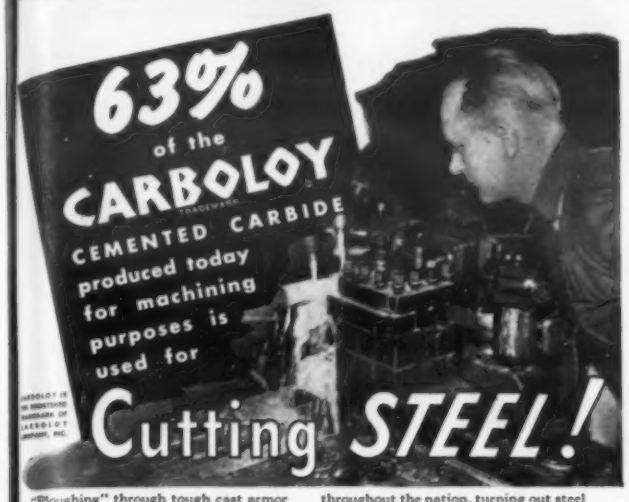
THE CLEVELAND PNEUMATIC TOOL CO.
3781 East 77th Street ★ CLEVELAND 5, OHIO
BRANCH OFFICES IN ALL PRINCIPAL CITIES

▲ Mention Item NED-3824 when writing ▲

• Multi-breaker lighting and distribution panels, installed in existing panel boxes, can increase the number of circuits as much as 50%. It's the quick, economical way to eliminate overloaded circuits . . . and it affords modern circuit breaker convenience and protection. Write for complete details or consult your nearest Square D Field Engineer.

ELECTRICAL EQUIPMENT • KOLLSMAN AIRCRAFT INSTRUMENTS
SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

▲ Mention Item NED-3825 when writing ▲



"Ploughing" through tough cast armor plate at cuts up to 1 in. deep—drilling gun barrels—cutting off shell—taking interrupted cuts through sand holes and scale—these are typical of the present day uses of Carboloy cemented carbide tools for cutting steel.

Today 63% of all Carboloy cemented carbides produced by Carboloy Company for machining applications are steel cutting grades. You'll find them in practically every major war plant throughout the nation, turning out steel parts for war at speeds 4 to 5 times faster than former tool materials, staying sharp up to 10 times longer—increasing production often as much as 300% on the thousands of applications upon which victory depends.

Write today for catalog GT-142 listing Carboloy cemented carbide grades for cutting steel, cast iron and non-ferrous metals available in more than 300 standard Carboloy tools and blanks.

CARBOLOY COMPANY, INC., 11167 E. 8 MILE ROAD, DETROIT, MICHIGAN

Sole makers of the Carboloy brand of cemented carbides

Birmingham, Ala. • Chicago • Cleveland • Los Angeles • Newark • Philadelphia • Pittsburgh • Seattle

Canadian Distributor: Canadian General Electric Co., Ltd., Toronto, Canada. Foreign Distributor: International General Electric Co., Schenectady, N. Y.

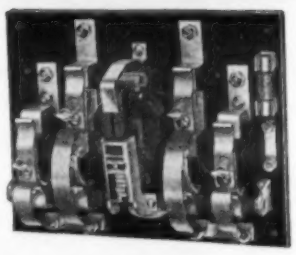
CARBOLOY TITANIUM CARBIDES TANTALUM CARBIDES TUNGSTEN CARBIDES

▲ Mention Item NED-3826 when writing ▲

TRANSFER FROM NORMAL TO EMERGENCY SERVICE IN 1/25 SECOND

that's CONTINUOUS

Get ALL the facts about positive unfailing operation of



NEW Improved

ZENITH Automatic TRANSFER SWITCH

DEPENDABILITY where service must *not* be interrupted. Minimum number of parts. All contacts on one shaft. No "off" position possible. A.C. to A.C., A.C. to D.C., any combination. 1 to 4-pole types, 30 to 400 amps., 18 capacities. PROMPT DELIVERY.

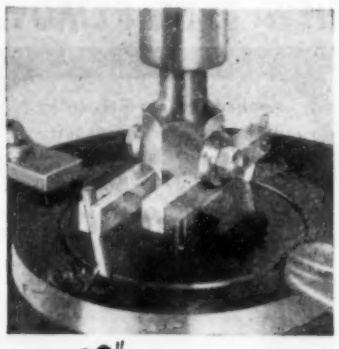
Send for NEW Zenith Catalog

Latest information on magnetic contactors, remote control and automatic time switches, reset, interval, and process timers, program clocks. *Control equipment for special jobs.* Write

ZENITH ELECTRIC CO.
156 West Walton Street Chicago, Illinois

▲ Mention Item NED-3827 when writing ▲

NEW *Adjustable* FLY CUTTER



Holes or Disks 4" to 10"
One Inch Thickness Capacity
Unique Blade Arrangement
Simplified, Long Life Design

This remarkable new Clark Cutter does the work of several tools, results in substantial operating economies. PITCHED BLADES of precision-ground High Speed Steel set with 11-degree drag cut true and smooth ...relieve chatter; make clean, long-curl chips, give longer bit life. REMOVABLE PILOTS, hardened and ground, permit use of lead drills. Only ⅛ inch work clearance required; allows deeper cuts without undue blade stress. Straight or tapered shanks. PROMPT DELIVERY on suitable priority. *Write for Bulletin No. NED-7.*

Clark Hole Cutters and Surface Facers Slash Tool Costs • Write for Details

Robert H. Clark Company
3424 SUNSET BLVD. • LOS ANGELES 26
MANUFACTURERS: PRECISION TOOLS, PRECISION PARTS

▲ Mention Item NED-3828 when writing ▲

New Literature—Continued

PRODUCT DESIGN FILE—8½ x 11-inch file of 200 manufacturers' catalogs contains 1500 pages of specific product information on materials, finishes, parts, techniques and work equipment for use by executives, engineers and designers—issued by Sweet's Catalog Service, F. W. Dodge Corp., 119 West 40th St., New York City.

▲ Mention Item NED-3829 when writing ▲

INSULATING COMPOUNDS—16-page illustrated catalog is descriptive of insulating compound for electrical equipment which has high dielectric strength and is resistant to moisture, alkalies, petroleum products, abrasive action, corona, light and salt water—issued by The Insl-X Co., Dept. NED 857 Meeker Ave., Brooklyn, N. Y.

▲ Mention Item NED-3830 when writing ▲

METAL PRODUCTS—4-page illustrated folder covers line of sheet metal products—included are crimp roofing, corrugated roofing and siding, ridge roll, weatherboard, conductor pipe, gutter, elbows and flashing—issued by Cheney Metal Products Co., 35 Oxford St., Trenton, N. J.

▲ Mention Item NED-3831 when writing ▲

SYNTHETIC RUBBER—40-page illustrated booklet, "The Five Commercial Types of Synthetic Rubber", traces development of synthetic rubber, describes properties of commercial synthetic rubbers and relates part of company in development, manufacture and use—issued by United States Rubber Co., 1207 Rockefeller Center, New York City.

▲ Mention Item NED-3832 when writing ▲

SPRINGS—39-page illustrated booklet contains data on formulas of spring design and engineering for compression, extension, torsion, motor and flat springs and wire forms—includes extension sheets of diagrams and tables—issued by Mid-West Spring Mfg. Co., 4632 S. Western Ave., Chicago, Ill.

▲ Mention Item NED-3833 when writing ▲

BRAZING ALLOYS—18-page illustrated bulletin No. 12-A concerns low temperature silver brazing of metals with Sil-Fos and Easy-Flo alloys—directions for use are outlined—issued by Handy & Harman, N-10, 82 Fulton St., New York City.

▲ Mention Item NED-3834 when writing ▲

COATED ABRASIVES—17-page illustrated booklet, "Blue Print for Faster Better Production", contains information, illustrations and prices of coated abrasive specialties for metal finishing and polishing work—issued by Behr-Manning Co., Troy, N. Y.

▲ Mention Item NED-3835 when writing ▲

PRODUCTION FACILITIES—19-page illustrated brochure outlines production facilities and equipment in company's two plants for handling contract work from other manufacturers—primarily engaged in making radio antenna equipment, company is interested in contracts in related fields—issued by The Ward Products Corp., 1523 E. Forty-fifth St., Cleveland, O.

▲ Mention Item NED-3836 when writing ▲

THE NEW MODEL "XLD" RECIPROCATING *Easy* ELECTRIC SANDER

WITH DETACHABLE BOTTOM PLATE

The new Model "XLD" EASY Sander embodies all of the features and rugged construction of previous models, plus . . . . a unique *Snap-Action* method for instant attachment of required type of sanding pad to fit the job. Sanding pads of correct size, shape and flexibility further speed production.

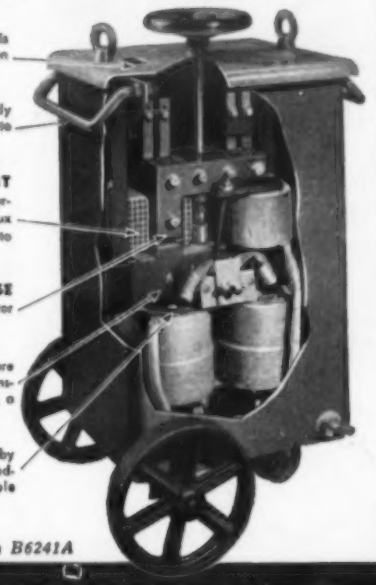
There's work for the "EASY" on most War Production jobs . . . . sanding, rubbing, polishing . . . . curved or flat surfaces . . . . wet or dry . . . . in the manufacture and maintenance of airplanes, gliders, propellers (wood or metal) . . . . firearms, searchlights, patterns, dies, transparent plastics and hundreds of other applications . . . . with savings of 50% to 75% in time, labor, abrasive, on even the closest tolerance work . . . . with inexperienced help, men or women.

Write for Literature!

DETROIT SURFACING MACHINE CO.
7423 W. DAVISON DETROIT, MICHIGAN

▲ Mention Item NED-3837 when writing ▲

Allis-Chalmers Announces an Important new Forward Step in a-c Welding: AMPAC "200"!



CONVENIENT ampere dial is visible at all times through open window in casing.

SAFE LIFTING — sturdy handles are fastened firmly to frame of machine itself.

BETTER LOW CURRENT WELDING: reactor coil surrounding air gap utilizes flux passing through upper core to increase striking voltages.

LESS VIBRATION OR NOISE because of short travel of reactor core. Cuts wear.

LOW FLUX LEAKAGE, more efficiency with integrated transformer and reactor having a common core.

STEPPED-UP COOLING, by means of air-duct between windings, eliminates any possible breakdown between coils.

Send for Bulletin B6241A

ALLIS-CHALMERS
MILWAUKEE·WISCONSIN

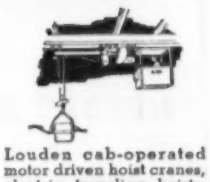
▲ Mention Item NED-3838 when writing ▲

Women Can Make It

WHEN LOUDEN LIFTS, TURNS AND HAULS IT

AS the problem of "manpower" for America's factories becomes more and more acute, more women will have to do jobs only men have done before. There is no other answer! Fortunately, this is not an impossible situation. Thousands of jobs handled by men in the past because of the physical effort and stamina required, can be handled by women . . . when a Louden materials handling unit is used to eliminate the physical labor.

A Louden system makes complete control of any load up to 10 tons so simple and easy that any woman can now "swing it" . . . whether it's receiving or unloading, storage or distribution, processing or finishing, assembling or shipping. Louden speeds the flow of materials throughout the plant. Output gains tremendously. Workers keep on producing at the same high level throughout the day. One person can do the work of four. New manpower resources are discovered right in your own plant. Louden equipment adapts itself to a department, floor, factory or a universal and completely integrated handling system for acres of buildings. Louden offers so much that you should write or wire for full details *today*. The Louden Machinery Company, 547 E. Superior Ave., Fairfield, Iowa.



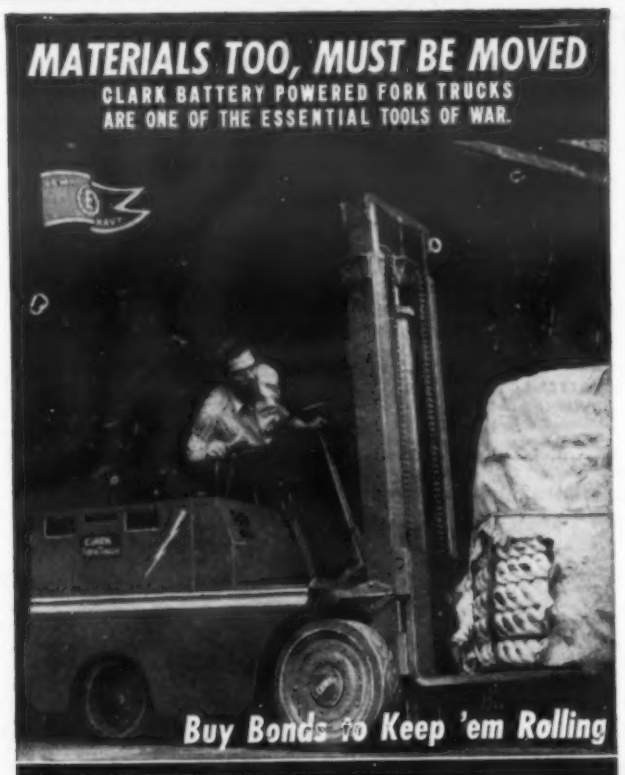
Louden cab-operated motor driven hoist cranes, electric traveling hoists, chain hoists, universal single and double track monorail, switches, scales, etc. offer completeness, flexibility, adaptability.

Louden equipment can be installed while work goes on. Standardized construction makes reasonable deliveries possible.

Materials Handling Manual FREE
64 pages of facts, photographs, installations, man-saving, time-saving, space-saving methods. Write for free copy today.

LOUDEN OVERHEAD MATERIAL HANDLING SYSTEMS
Untangle Men, Machines, Manufacturing and Material Handling

▲ Mention Item NED-3839 when writing ▲

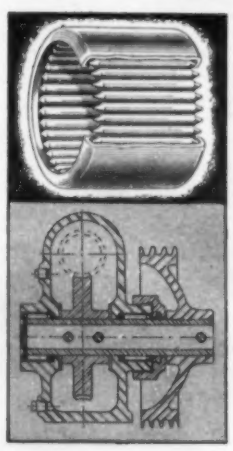


CLARK TRUCTRACTOR
DIVISION OF CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN, U.S.A.

▲ Mention Item NED-3840 when writing ▲

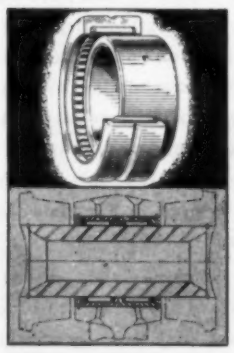
NEEDLE BEARINGS
All Types—All Sizes

NEEDLE BEARINGS TYPE DC



For use in many applications where light weight and high load capacity are of first importance, the Torrington Type DC Needle Bearing meets a wide range of requirements. It is a self-contained anti-friction unit of minimum size that can be easily and quickly installed. On the gear shaft of a flap control gear box, for example, Type DC Bearings, with their small diameter, fit readily in place of ordinary bushings, offer the advantages of high capacity, low cost. Write our Torrington plant for Catalog 118.

NEEDLE BEARINGS TYPE NCS



The wrist pin illustrated is a typical application of Needle Bearings Type NCS. With a full complement of rollers, it has many of the advantages of the Type DC Needle Bearing—low friction coefficient, high-load capacity, little maintenance and long service life—and its relatively heavy hardened outer race makes it adaptable to heavier load requirements. Write our South Bend plant for Bulletin Z-104.

NEEDLE ROLLERS TYPE LN

For use in a few miscellaneous applications where bearings must be assembled on the job, Torrington Needle Rollers Type LN are available. They are produced in a practical range of sizes to meet varying service and load requirements. Our engineering department will be glad to discuss applications and make recommendations. Write our South Bend plant for Bulletin Z-104.

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Established 1866
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Cleveland Seattle Chicago San Francisco
Los Angeles Toronto London, England

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Every feature fills a wartime need

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New Literature—Continued

APPRENTICE TRAINING—26-page illustrated manual outlines all details of various courses of study conducted by company's apprentice school—discusses school's purpose, method of selecting students, administration and similar topics—issued by The B. F. Goodrich Co., Dept. E, 500 South Main St., Akron, O.

▲ Mention Item NED-3842 when writing ▲

PHENOLIC RESINS—2-page bulletin outlines instruction for use of Bakelite phenolic resins BR-0013 and BR-0014 for brush bristle setting—issued by Bakelite Corp., Dept. E, 30 E. Forty-second St., New York City.

▲ Mention Item NED-3843 when writing ▲

SHEET METAL EQUIPMENT—42-page illustrated booklet covers line of dust and fume control equipment, spray booths, mechanical washers, industrial ovens, sheet metal equipment and accessories—issued by Schmieg Industries, 314 Piquette Ave., Detroit, Mich.

▲ Mention Item NED-3844 when writing ▲

ELECTRIC GAGES—8-page illustrated reprint No. GEA-3991 describes functions of twenty-one gages and contains chart showing schematic representations of electric gage circuit applications—issued by General Electric Co., Schenectady, N. Y.

▲ Mention Item NED-3845 when writing ▲

BOILER WATER CONDITIONING—16-page illustrated bulletin No. 504 discusses boiler water conditioning and describes Elgin Deconcentrator systems for treating and purifying boiler water—issued by Elgin Softener Corp., Elgin, Ill.

▲ Mention Item NED-3846 when writing ▲

VARIABLE SPEED DRIVE—15-page illustrated catalog No. TR-432 contains description of reducer type transmission as well as engineering data and rating tables for selection of unit of proper size—issued by Reeves Pulley Co., 1000 N. Wilson St., Columbus, Ind.

▲ Mention Item NED-3847 when writing ▲

WIRE PARTS—4-page illustrated folder shows some of many uses for wire parts—among applications included are fasteners, grills, shelving, handles and reinforcing—issued by Union Steel Products Co., Albion, Mich.

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GRINDING WHEELS—6-page illustrated bulletin describes open structure grinding wheels and segments which are particularly adapted for jobs requiring comparatively heavy stock removal or extra coolness of cut or both—issued by Norton Co., 200 New Bond St., Worcester, Mass.

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CABLE TERMINATORS—4-page illustrated bulletin No. 4303 is descriptive of "PB" indoor cable terminators for voltages up to and including 2300 volts—issued by Delta-Star Electric Co., 2402 Fulton St., Chicago, Ill.

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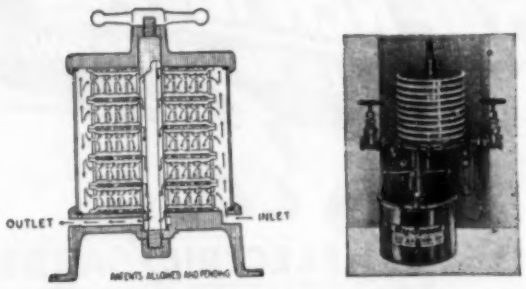
An Unusual Filter for Liquids



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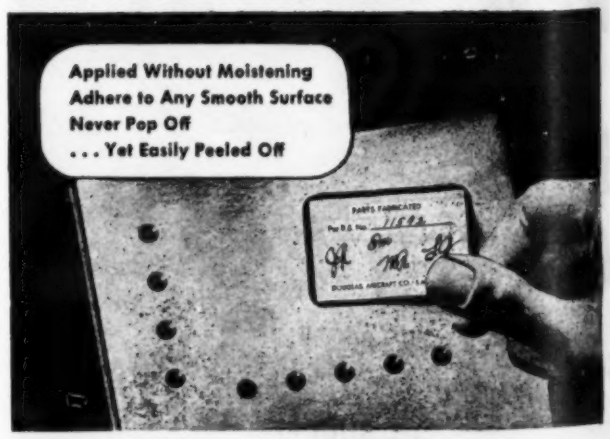

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WESTON *All-Metal* TEMPERATURE GAUGES

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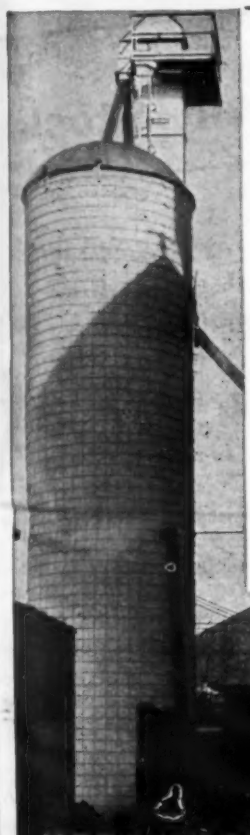

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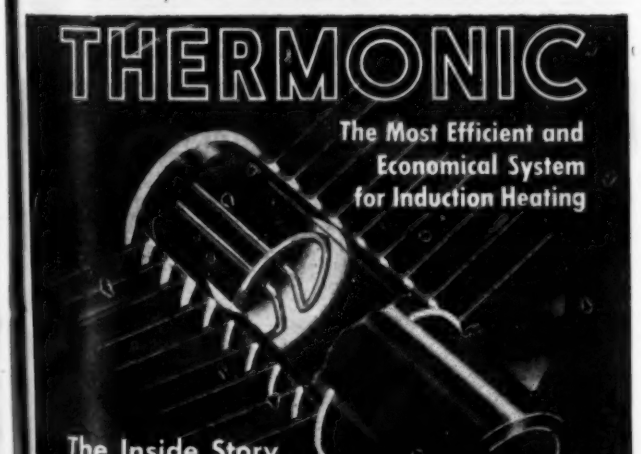

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New Literature—Continued

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CLEANING EQUIPMENT—8-page illustrated booklet lists composite answers to questionnaire on use of line of cleaning machines and solutions for cleaning, rinsing, polishing and drying operations—issued by L & R Mfg. Co., Dept. K, 54-56 Clinton St., Newark, N. J.

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BOLT CUTTERS—48-page illustrated handbook presents data on application, selection, use and care of bolt, chain, rod and other lever action hand cutting tools—issued by H. K. Porter, Inc., 4957 Harrison St., Pittsburgh, Pa.

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TESTING INSTRUMENT—4-page illustrated folder describes Testmaster universal dial indicator for production inspection and testing required in general machine shop and tool room operations—issued by Federal Products Corp., 1 Reservoir Ave., Providence, R. I.

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MANUFACTURING FACILITIES — 68-page illustrated book, "A Report To The Nation" traces history of company and shows their plant, many products and methods of machining—issued by Lombard Governor Corp., Dept. 29, 150 Main St., Ashland, Mass.

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BRAZED JOINT DESIGN—4-page illustrated folder gives information regarding design of low temperature silver alloy brazed joints made with Sil-Fos and Easy-Flo brazing alloys —issued by Handy & Harman, N-10, 82 Fulton St., New York City.

▲ Mention Item NED-3863 when writing ▲

MUSIC IN INDUSTRY—24-page illustrated booklet, "Music and Manpower", treats subject of industrial music as production factor both historically and currently—issued by Operadio Mfg. Co., Dept. NED, St. Charles, Ill.

▲ Mention Item NED-3864 when writing ▲

MINERAL WOOL—21-page illustrated Commercial Standard CS105-43 concerns mineral wool cold storage insulation—covers both cold storage area and pipe line mineral wool insulation—single copies available from the Industrial Mineral Wool Institute, 441 Lexington Ave., New York City.

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DIE STEEL—4-page illustrated folder discusses use of Cromoco air hardening die steel for cutting and forming dies and for some types of punches, rolls, plug gages, broaches, lathe centers and similar products—issued by Firth-Sterling Steel Co., McKeesport, Pa.

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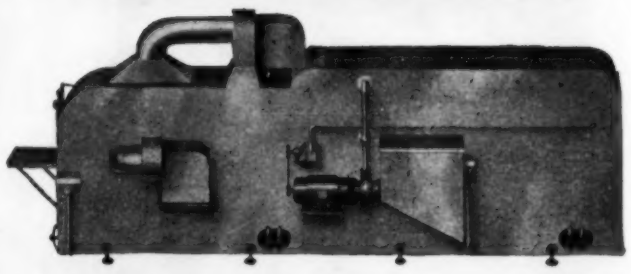

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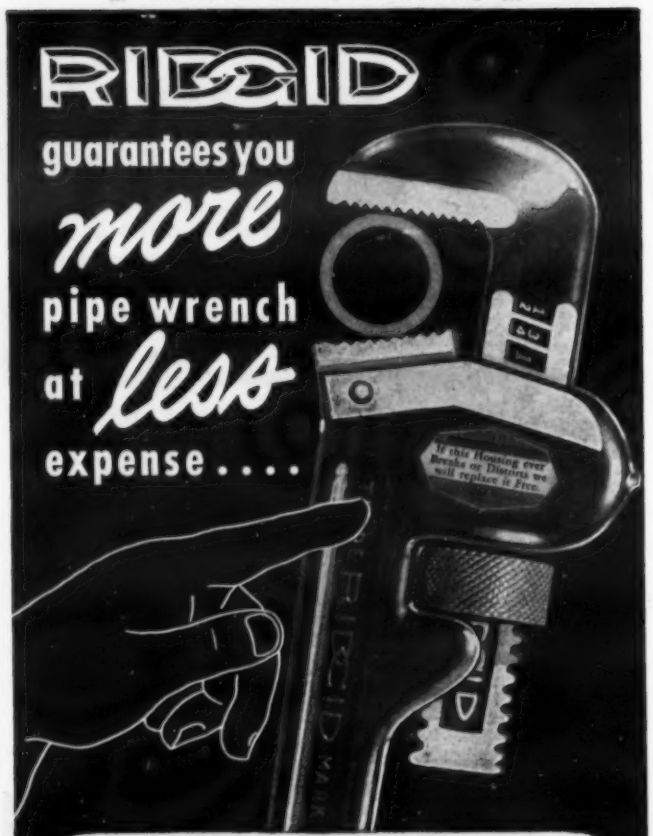

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July, 1943

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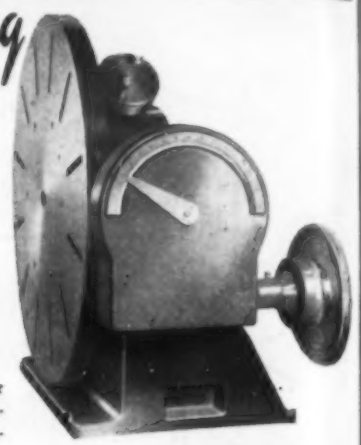

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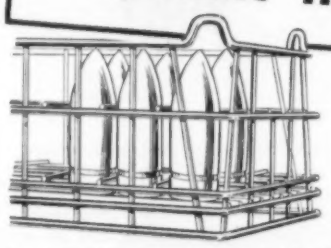

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400 Pine Street • Albion, Michigan

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Save Skilled Labor and Precious Time with This Highly Efficient Precision Drill Grinder

BLACK DIAMOND
• PRECISION DRILL GRINDERS •

SAWS BLACK DIAMOND TOOLS

FOR SMALL GAUGE AND FRACTIONAL DRILLS

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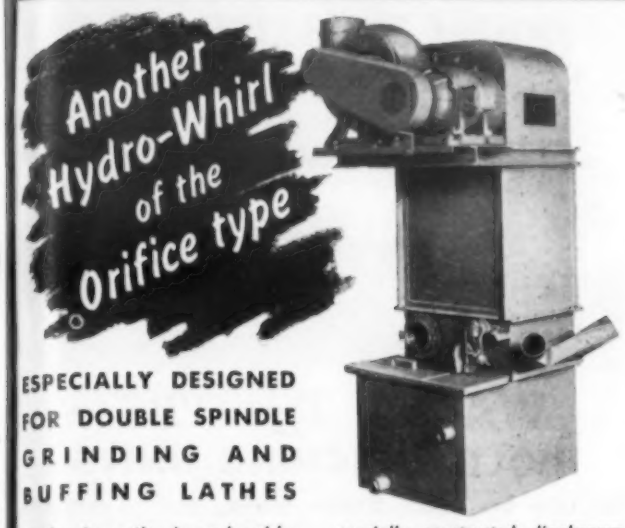

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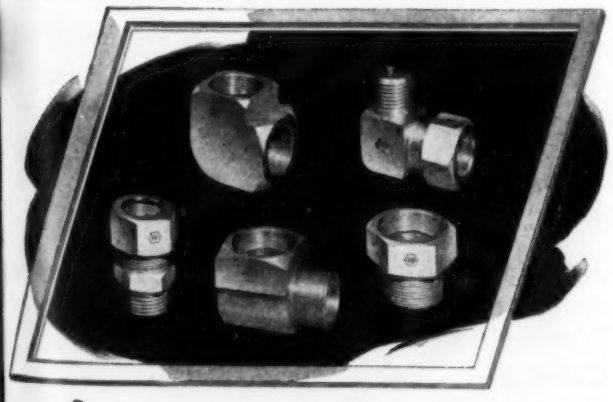

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. . . says leading shipyard*

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"We sprayed all types of color, oil, varnish, and flat, ranging from 7¼ to 32 pounds per gallon."
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REMOVES BURRS FROM INSIDE AND OUTSIDE EDGES IN ONE OPERATION!

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Keeps 'em CLEAN, Makes 'em LIVE LONGER!

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JOHNSON METAL CUT-OFF BANDSAW

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The Johnson Coolant Model offers unusual advantages for production requiring exceptionally high-speed .... on some jobs increases as high as 200% can be attained .... Longer blade life assured!

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JOHNSON MFG. CORP. ALBION, MICH.

Write today for descriptive literature to Sales Office, 5004 Chrysler Bldg., New York

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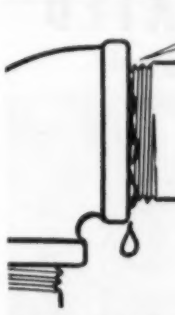

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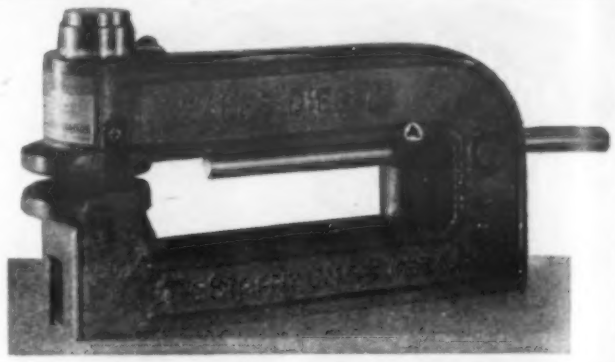

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for use on Press Brake Rails, and T-slotted Plates and Templates in Stamping Presses

● By unique patented design, Wales Type "B" Hole Punching Units, for punching flat sheets, can be used interchangeably on press brake rails, and T-slotted plates or templates in stamping presses.

Set-ups on T-slotted plates and templates are quickly made by simply bolting the units in exact position according to master pattern.

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Nothing attached to press ram . . . punch and die holder is self-contained . . . punch and die always in perfect alignment . . . interchangeable punches and dies . . . die-setting time cut from hours to minutes.

Type "B" Units punch holes up to 2" in diameter in 14-gauge sheets. Write for Catalog B.

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NORTH TONAWANDA, N. Y.
Specialists in Punching and Notching Equipment

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EDMONT rubber-coated, fabric-lined gloves for both men and women offer complete hand protection against oils, solvents, acids, caustics and other corrosive materials. The reinforced fabric lining makes them virtually snag proof and tear resistant; flexible and efficient to work with; easy and comfortable on the hands; and insures longer wear. Available in both natural rubber and synthetic rubber coatings. Two women's sizes, medium and large, gauntlet type. For men there is a choice of knit wrist and gauntlet.

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EDMONT MANUFACTURING CO.
503 Orange St. Coshocton, Ohio

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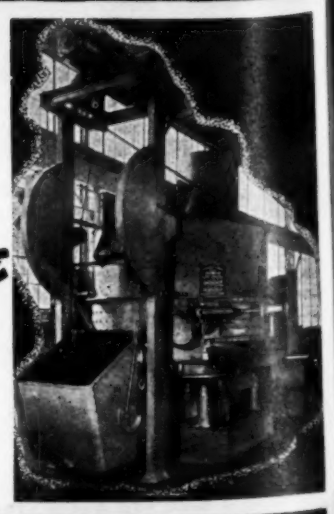
Put your Timing Control Problems up to Cramer



Equipped to engineer and manufacture complete control panels, as shown above, to automatically operate various sequences of Speedmullers, machine tools and processes.

Write for Bulletin 800

The R.W. CRAMER COMPANY Inc.
CENTERBROOK CONNECTICUT

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How to Select . . .

THE RIGHT THERMOMETER for your Process

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You will find a wealth of information in these Bulletins on Indicating Thermometers, Indicating Therm-otrols (Indicating, "Electronic Principle" Thermometer Controllers), Recording Thermometers and Recording Therm-otrols (Recording, "Electronic Principle" Thermometer Controllers), all of which are available in ranges from —100°F. to +1000°F., or —70°C. to +550°C. Also illustrated and described are Thermometer Bulbs, Bulb Sockets, Capillary, Capillary Armor, Charts, Chart Ranges, Scale Ranges, etc. Explanation is given of how the Flame-otrol (combustion safeguard), Purging Timers, Program Control and Proportioning Control can be integrally incorporated in the various thermometers.

Write for any one, or all of these Bulletins without obligation.

Wheelco Instruments Co.
629 W. HARRISON STREET - - - CHICAGO, ILLINOIS

Originator of "Electronic Principle" Temperature Controls

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OPERATE 16 TO 28 TIMES FASTER

THAN SCREW-STEM-TYPE VALVES

A QUARTER-TURN FULLY OPENS OR CLOSES

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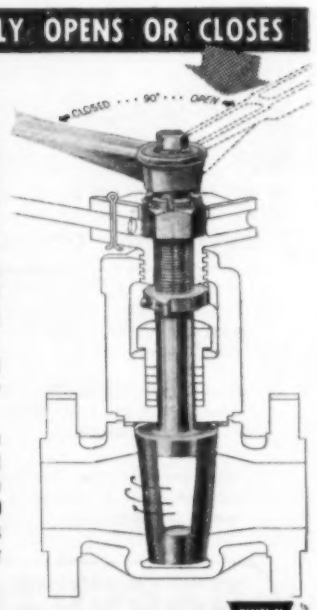

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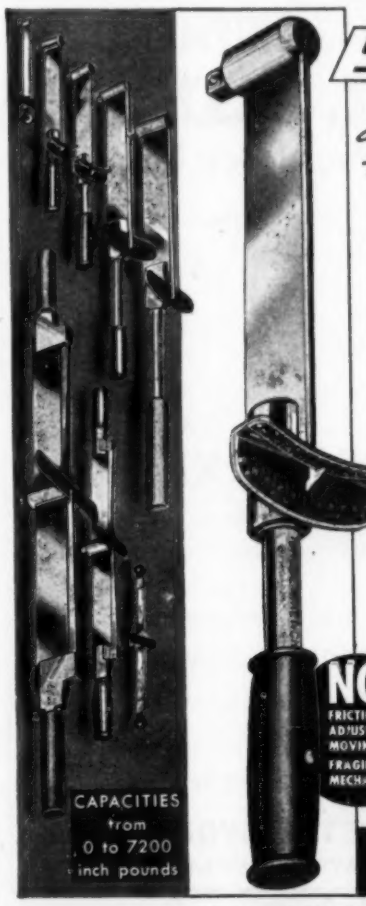

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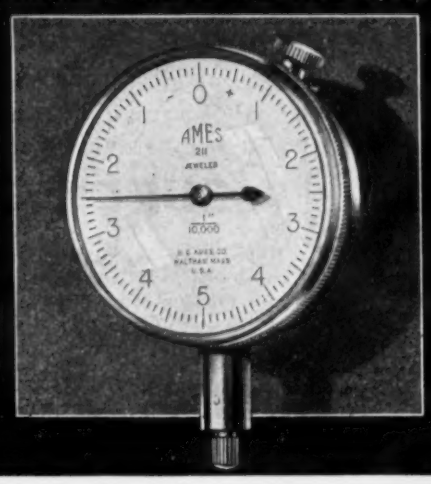

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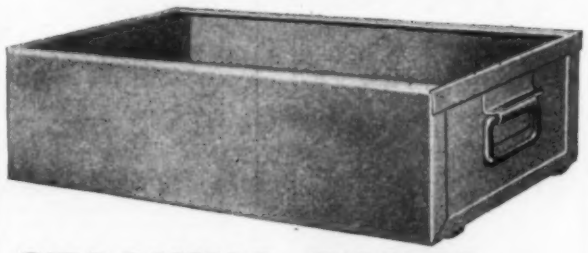

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